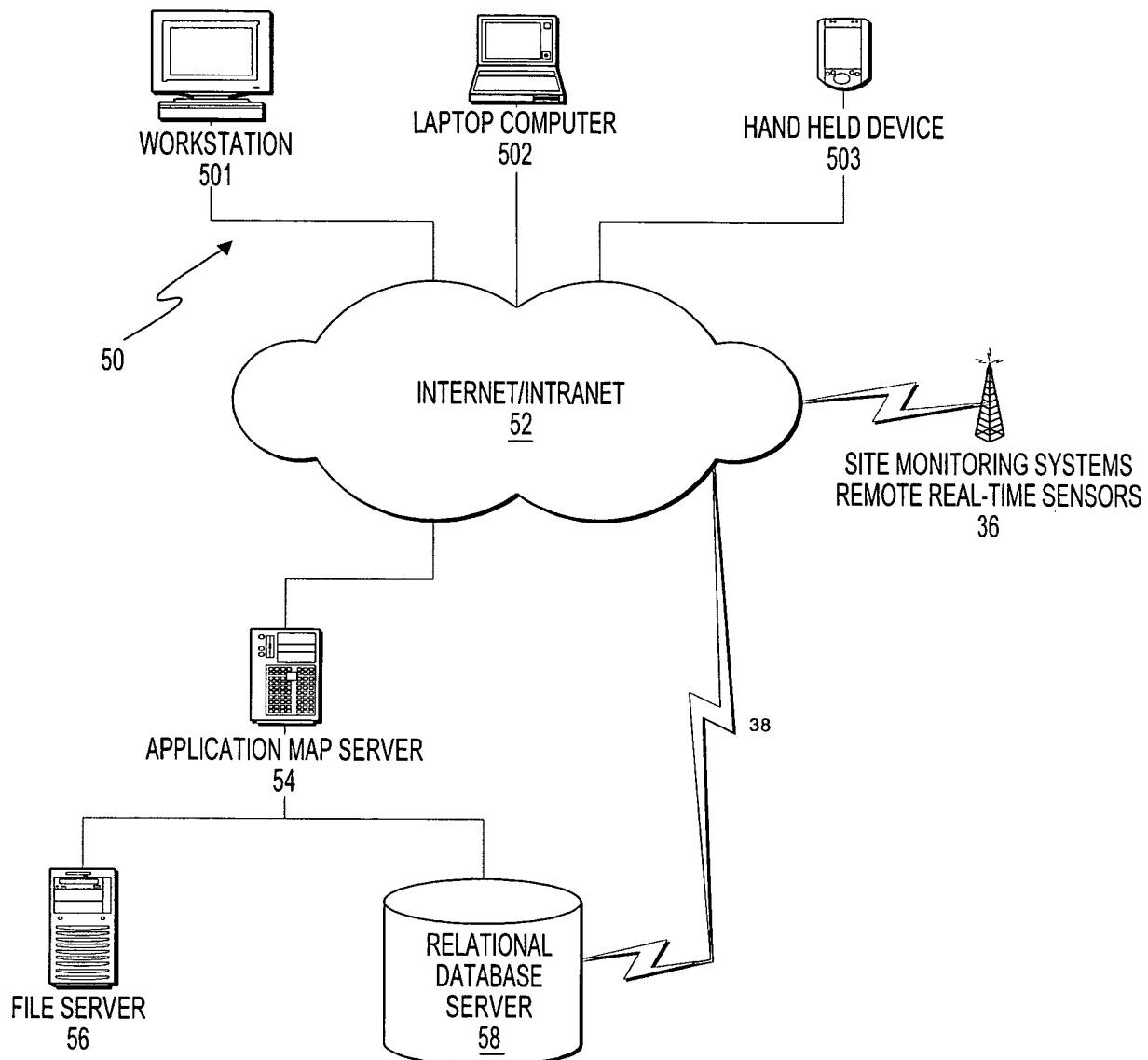
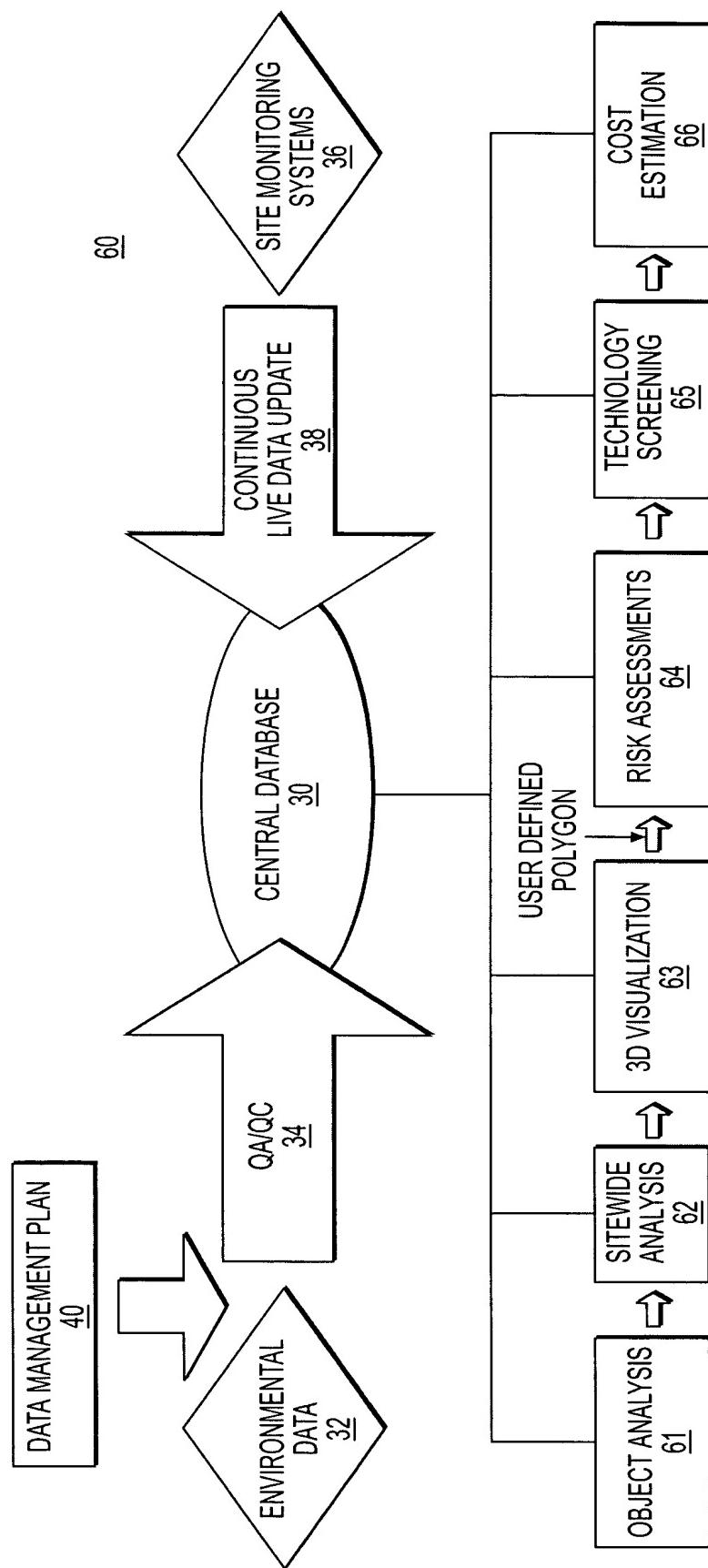


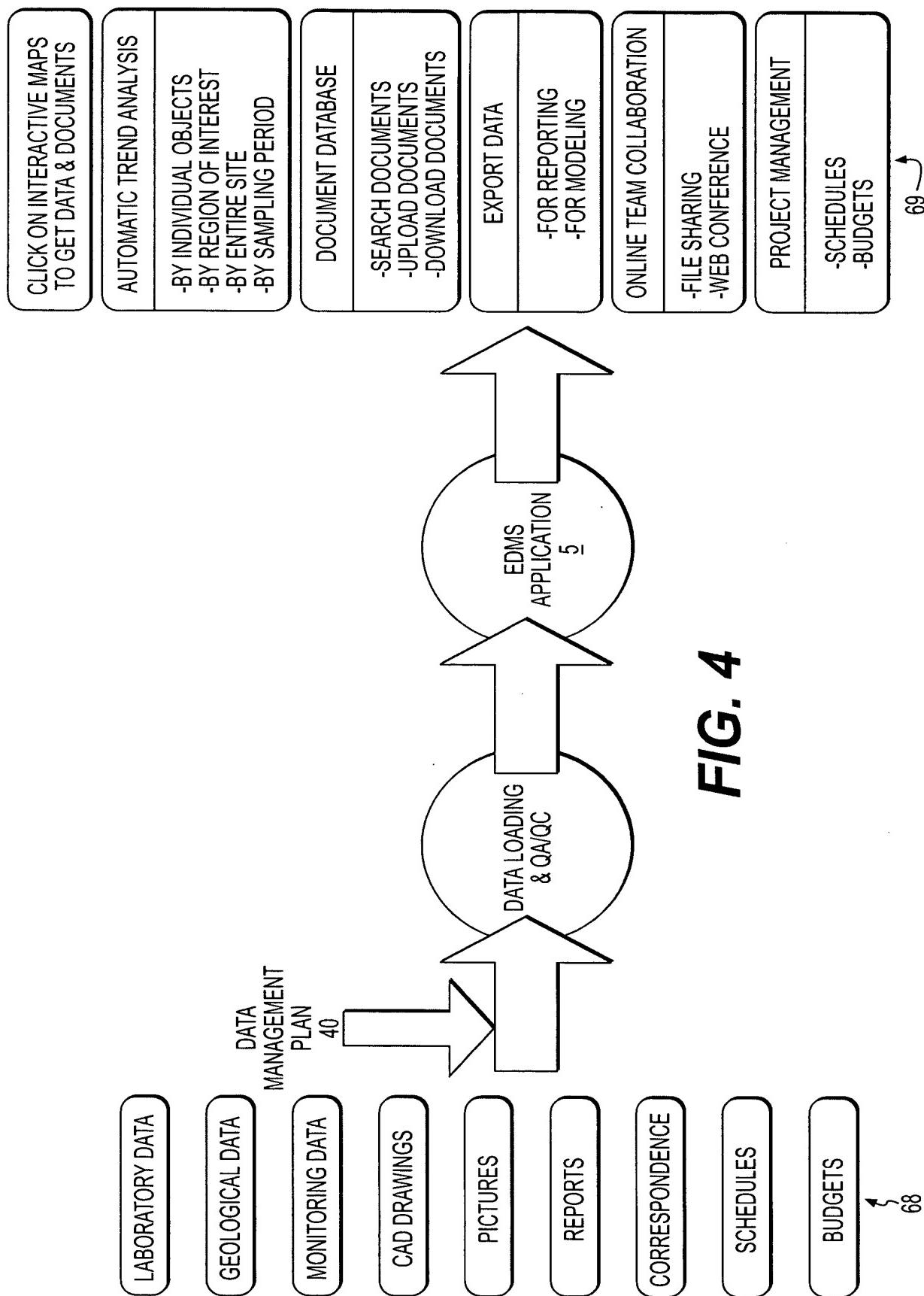
FIG. 1



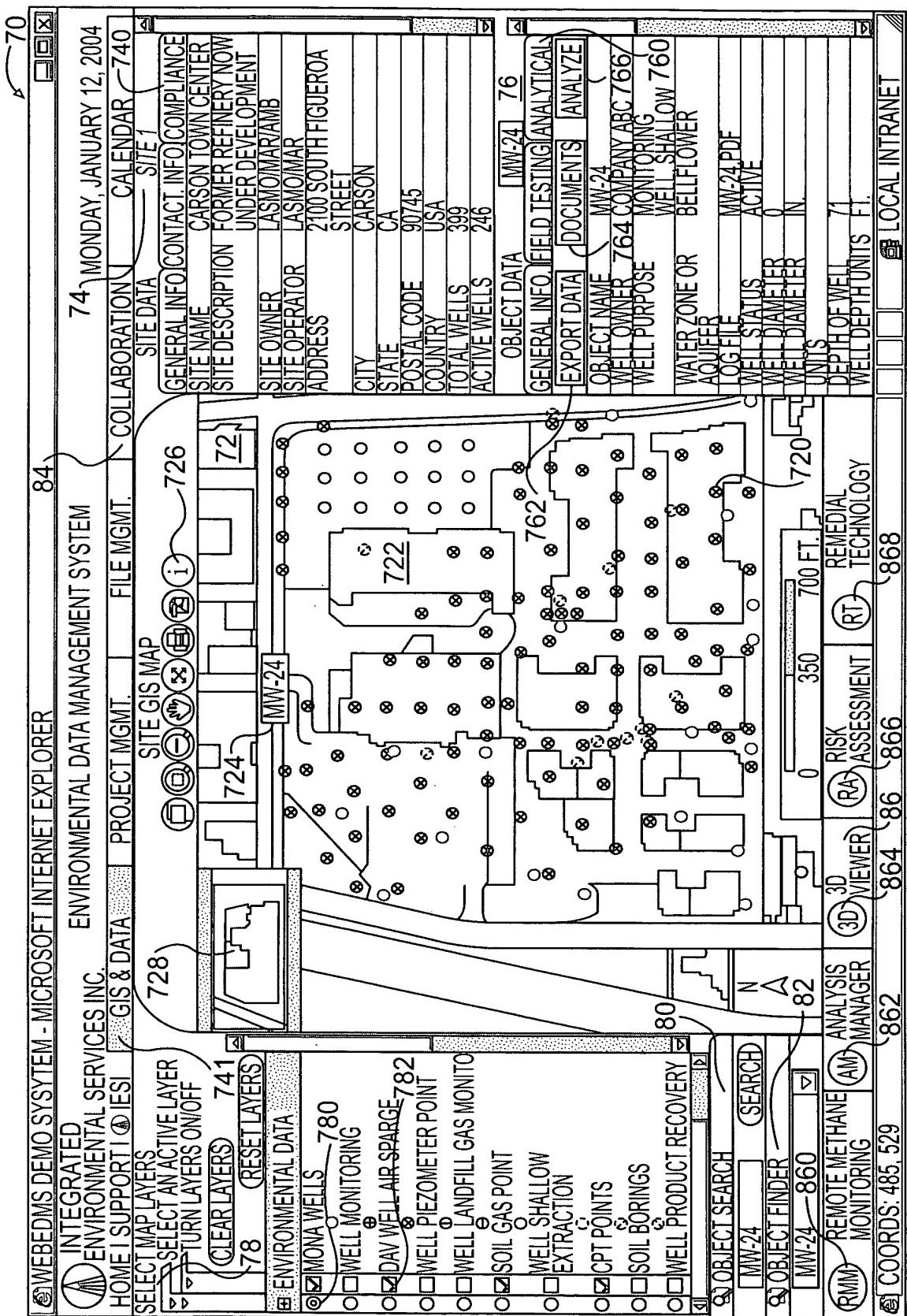
**FIG. 2**



**FIG. 3**



Inventor(s): Michael Y. YOUNG, et al.  
Contact Name: Sean S. Wooden (202) 662-2700  
Attorney Docket No.: 151877



**FIG. 5a**

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

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WEBEDMS SYSTEM - MICROSOFT INTERNET EXPLORER

106 CONCENTRATION VS. TIME COMPARE TO STANDARD  
OBJECT NAME: MW-24

92 OBJECT NAME: MW-24

94

SELECT SAMPLE MATRIX (REQUIRED)  
[W/G]

SELECT DATA TIME DURATION:  
START DATE: MM/DD/YYYY (OPTIONAL)  
01/10/1990

END DATE: MM/DD/YYYY (OPTIONAL)  
01/10/1990

EXCLUDE NON-DETECT SAMPLES

98

SELECT SCREENING QUERY:  
100

4. COMPARE ANALYTE CONCENTRATION TO REGULATORY STANDARD

REGULATORY STANDARD  
[CALDHS PRIMARY MCL]   
102

ANALYTE  
[71-43-2: BENZENE]   
104

GO

22 20 18 16 14 12 10 8 6 4 2 0

CONCENTRATION (UNITS) ug/L

2/24/1995 3/18/1996 8/28/1996 3/31/1997 8/14/1997 3/6/1998 2/25/1999 1/1/25/1999

108 NUMBER OF RECORDS FOUND 31

RIGHT CLICK ON THE LINK BELOW AND SAVE THE  
FILE TO YOUR LOCAL DRIVE  
EXCEL ANALYTICAL OUTPUT FILE  
FOR ID: MW-24

STANDARD   
BELOW STANDARD   
ABOVE STANDARD

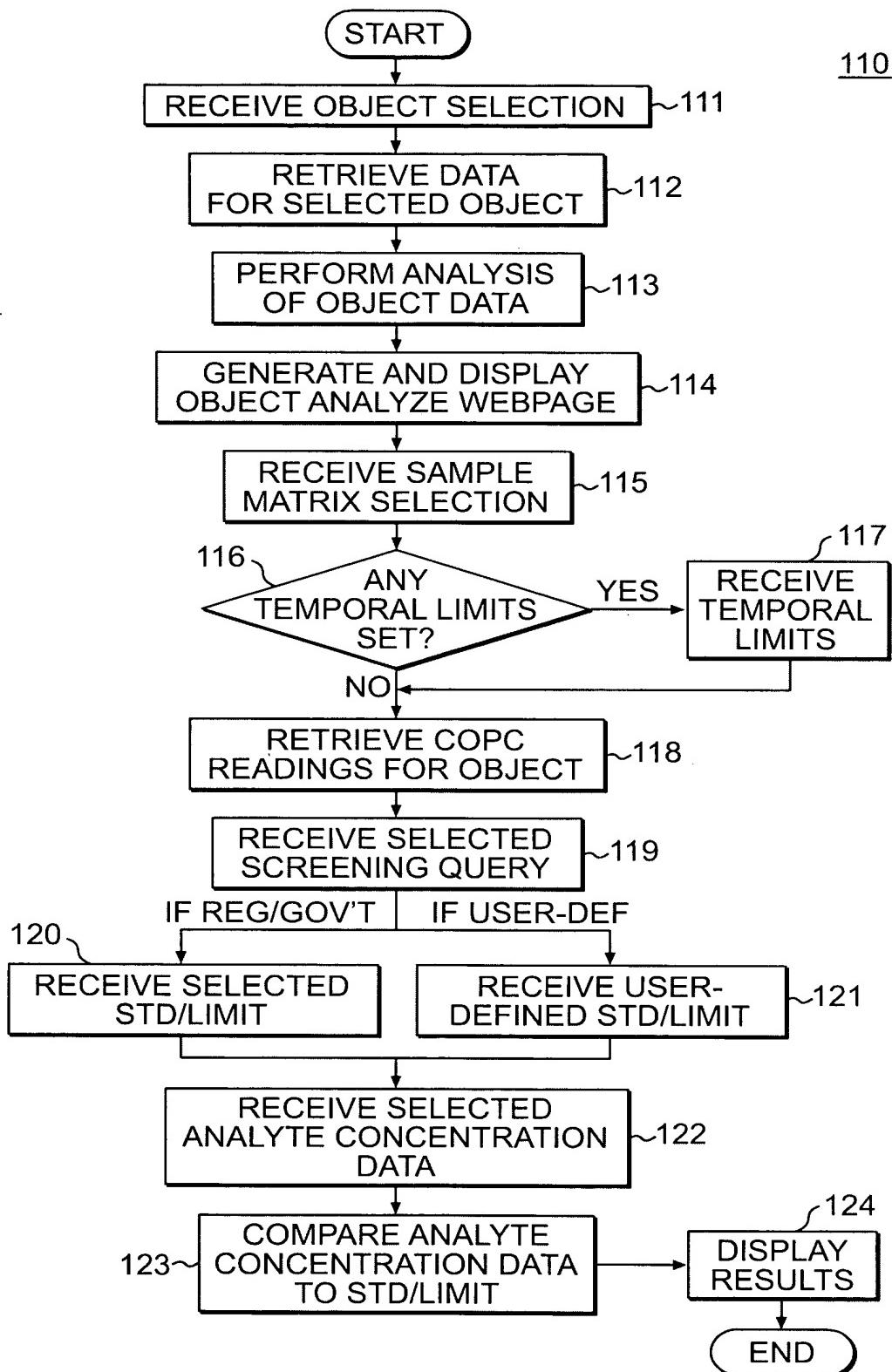
DONE

INTERNET

FIG. 5b

Date	Concentration (ug/L)
2/24/1995	1
3/18/1996	1
8/28/1996	1
3/31/1997	1
8/14/1997	1
3/6/1998	1
2/25/1999	1
1/1/25/1999	1

Chemical Name	Standard Value
BENZENE	1 ug/L

**FIG. 5c**

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

130

WEBEDMS DEMO SYSTEM - MICROSOFT INTERNET EXPLORER

INTEGRATED ENVIRONMENTAL SERVICES INC.

HOME | SUPPORT | IESI | GIS & DATA | PROJECT MGMT. | FILE MGMT. | COLLABORATION | CALENDAR

**MICROSOFT PROJECT CENTRAL**

ACTIONS HOME | TASKS | VIEWS | STATUS REPORTS | OFFLINE | LOG OFF | HELP | CHOOSE A VIEW: COSTVIEW | ▶

SEE INFORMATION ABOUT MICROSOFT PROJECT CENTRAL ASSIGNMENTS

YOU CAN SEE ASSIGNMENTS THAT HAVE BEEN MADE USING MICROSOFT PROJECT CENTRAL.  
YOU CAN ONLY SEE ASSIGNMENTS INFORMATION FOR RESOURCES THAT THE MICROSOFT PROJECT CENTRAL ADMINISTRATOR HAS GIVEN YOU PERMISSION TO VIEW.  
SHOW:  SUMMARY TASKS  SUMMARY ROLLUP  NONWORKING TIME

GROUP BY: RESOURCE | THEN BY: PROJECT | THEN BY: NONE | UNSORT

① ZOOM IN | ZOOM OUT | GO TO SELECTED TASK | USAGE VIEW |

① TASK NAME	START	FINISH	02 NOV '02	DEC '02	JAN '03	FEB '03	MAR '03	APR '03
CONTRACTOR 1	8/1/2002 8:00 AM	4/4/2003 5:00 PM	13/20/2002 11/17/2002	1/8/2003 2/9/2003	5/15/2003 6/29/2003	2/19/2003 3/29/2003	2/29/2003 4/1/2003	2/1/2003 3/30/2003
DEMO SITE	8/1/2002 8:00 AM	4/4/2003 5:00 PM						
MONA SYSTEM	8/1/2002 8:00 AM	4/4/2003 5:00 PM						
MONA CONTING	8/1/2002 8:00 AM	8/2/2002 10:40 AM						
SOUTHEAST QL	8/1/2002 8:00 AM	8/22/2002 10:40 AM						
BUILDING E1 F	8/1/2002 8:00 AM	8/1/2002 8:00 AM						
BUILDING E1 F	8/1/2002 8:00 AM	8/2/2002 10:40 AM						
TREATMENT COM	1/10/2003 8:00 AM	4/4/2003 5:00 PM						
CONSTRUCTION	1/10/2003 8:00 AM	4/4/2003 5:00 PM						
CONSTRUCT FO	1/10/2003 8:00 AM	1/27/2003 12:00 PM						
INSTALL ELECTR	2/18/2003 1:00 PM	2/25/2003 12:00 PM						
INSTALL TELEPH	2/18/2003 1:00 PM	2/25/2003 12:00 PM						
RELOCATE VE	3/11/2003 1:00 PM	3/25/2003 12:00 PM						
RELOCATE AR	3/25/2003 1:00 PM	3/17/2003 12:00 PM						
INSTALL NEW F	3/26/2003 1:00 PM	4/4/2003 5:00 PM						

134

DONE

UNKNOWN ZONE (MIXED)

F/G. 6

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

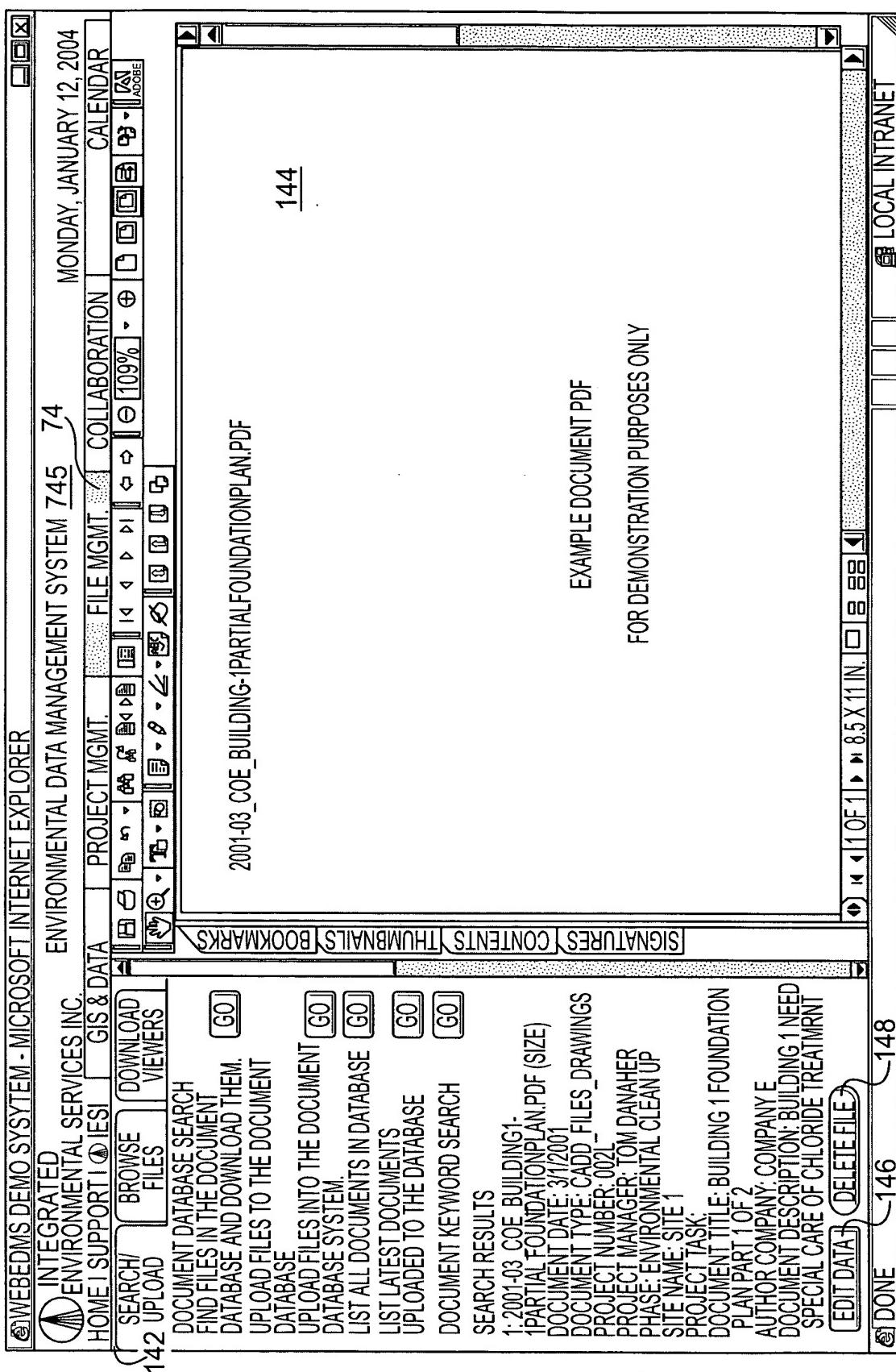


FIG. 7

140

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

 <b>INTEGRATED ENVIRONMENTAL SERVICES INC.</b> HOME   SUPPORT   ESI   FILE DROP BOX   MEET ONLINE   KNOWLEDGE BOARDS <b>FILE DROP BOX</b> 152	<p>WEBEDMS DEMO SYSTEM - MICROSOFT INTERNET EXPLORER</p> <p>ENVIRONMENTAL DATA MANAGEMENT SYSTEM <u>747</u> 74 MONDAY, JANUARY 12, 2004</p> <p>PROJECT MGMT. FILE MGMT. COLLABORATION CALENDAR</p> <p>UPLOAD FILES INTO THE DROP BOX FOR PICKUP <u>154</u></p> <p>STEP 1: FIND THE FILE YOU WISH TO UPLOAD</p> <p>CLICK THE BROWSE BUTTON TO SELECT THE FILE THAT YOU WANT TO ADD YOU CAN UPLOAD UP TO 3 FILES AT A TIME (NOTE: MAX FILE SIZE IS 30MB)</p> <p>SELECT 1ST FILE TO ADD [BROWSE...] SELECT 2ND FILE TO ADD [BROWSE...] SELECT 3RD FILE TO ADD [BROWSE...]</p> <p>STEP 2: CREATE FILE ATTRIBUTES TO HELP THE RECIPIENT FIND IT</p> <p>RECIPIENTS NAME: [ ] UPLOADED BY: [ ]</p> <p>NUMBER DAYS TO LEAVE ON SERVER: <u>1</u> [ ] COMMENTS: [ ]</p> <p>STEP 3: START THE FILE UPLOAD TO THE FILE DROP BOX</p> <p>CLICK THE ADD FILE BUTTON TO ALLOW OTHER USERS TO DOWNLOAD YOUR FILES ADD FILE <u>158</u></p> <p>DONE <u>150</u></p> <p>LOCAL INTRANET</p> <p><b>F/G.</b> 8</p>
---	--

**Inventor(s): Michael Y. YOUNG, et al.  
Contact Name: Sean S. Wooden (202) 662-2700  
Attorney Docket No.: 151877**

FIG. 9

160

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

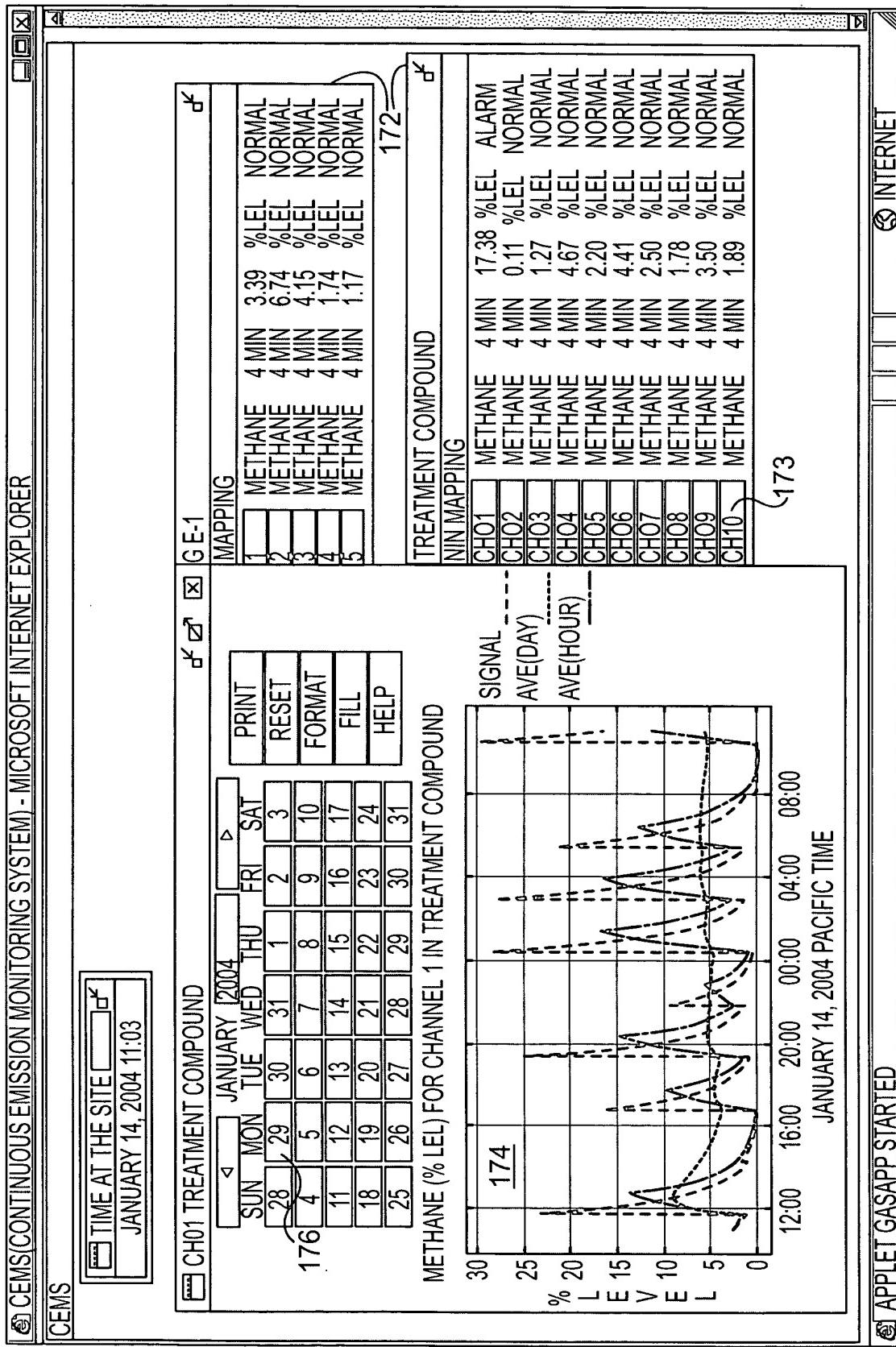


FIG. 10a

170

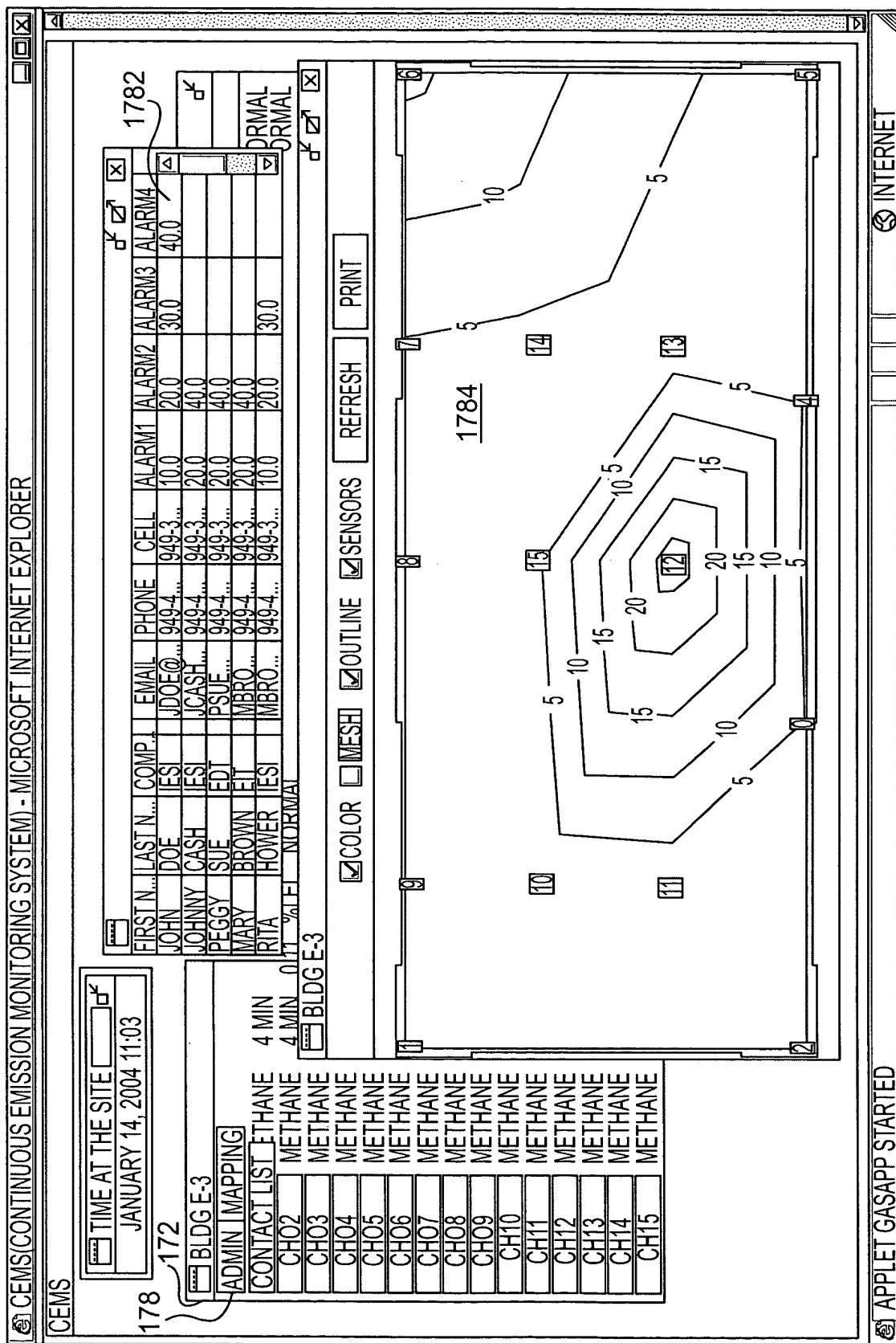


FIG. 10b

170

FIG. 11a

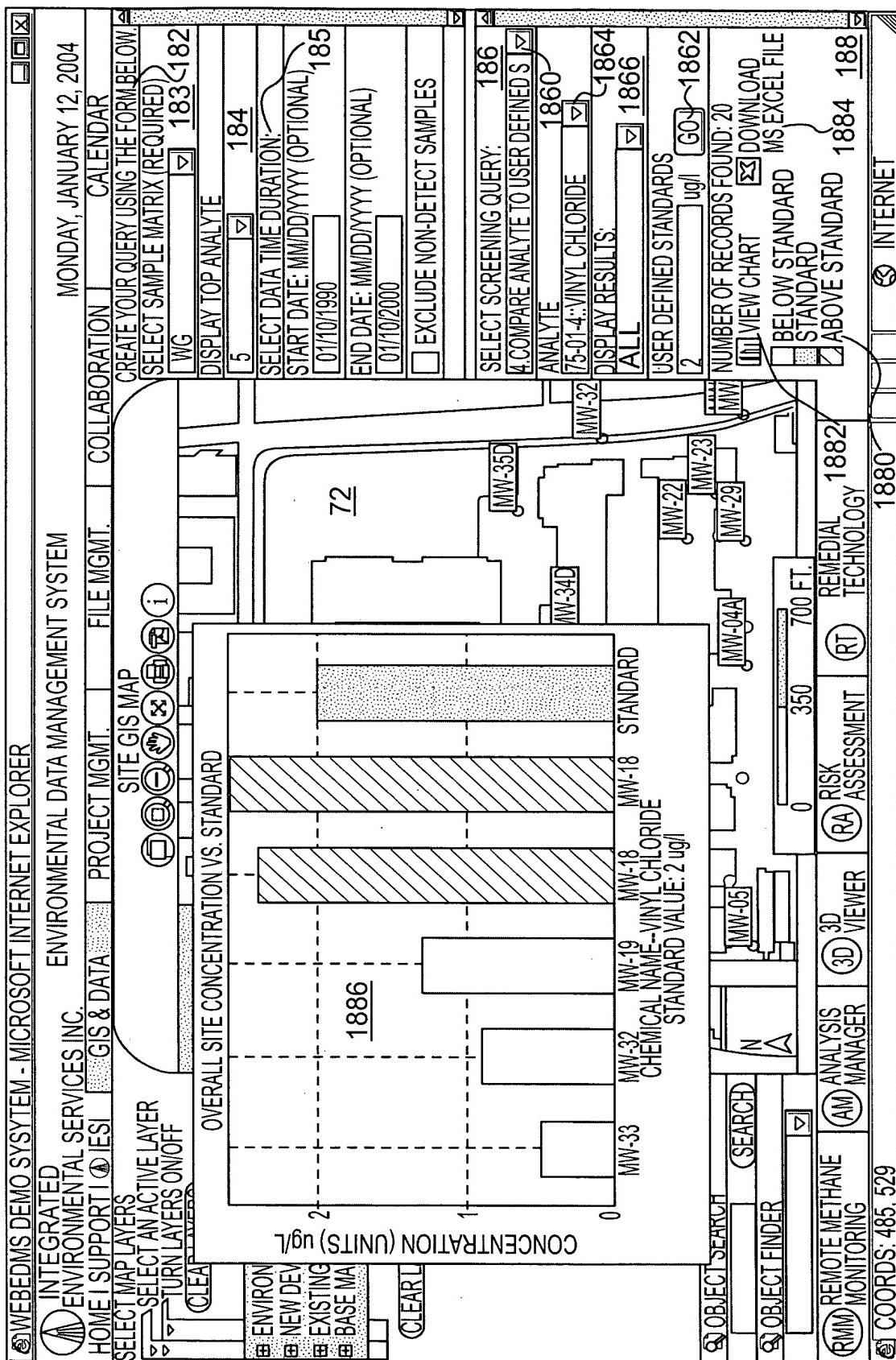
70

862

Inventor(s): Michael Y. YOUNG, et al.

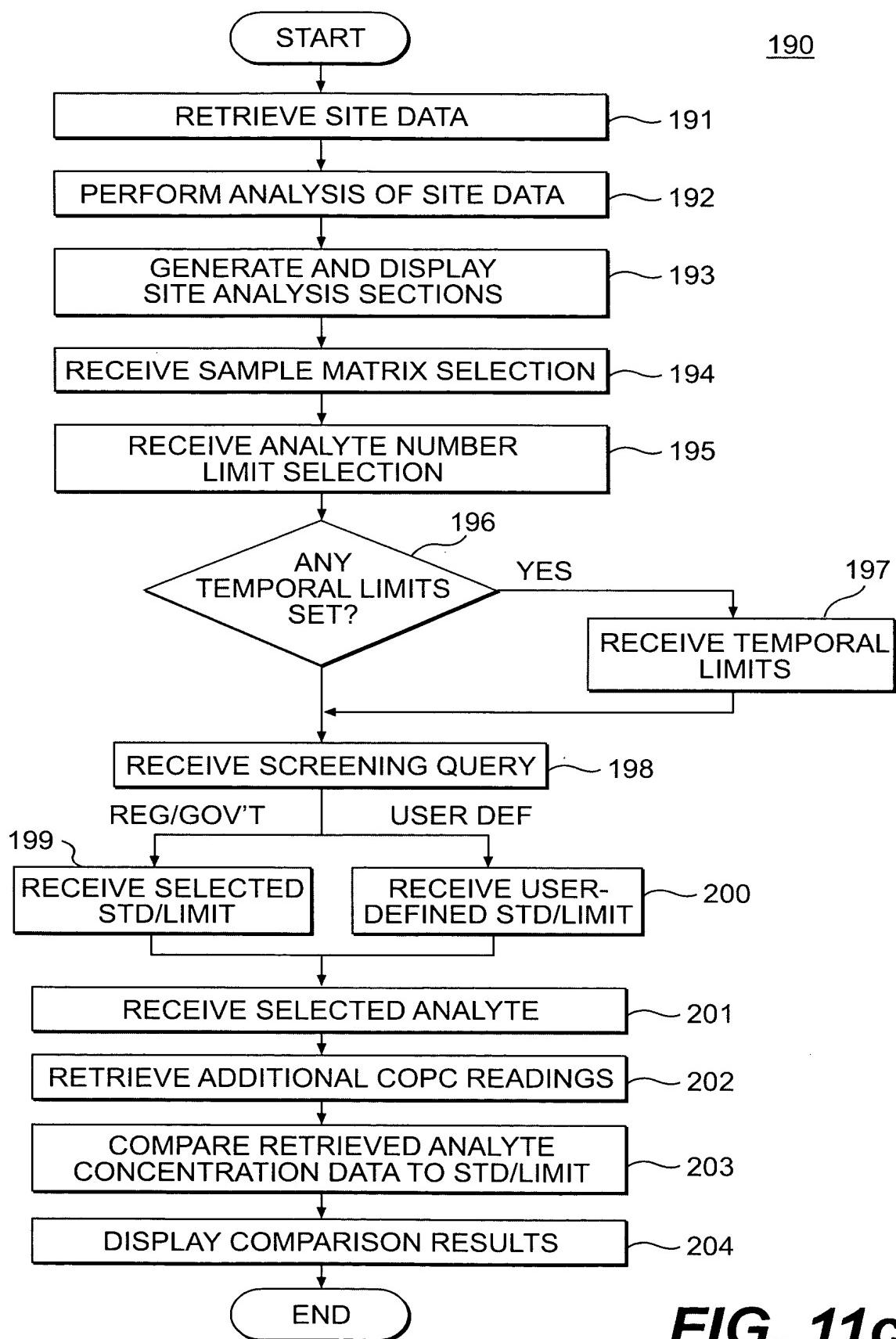
Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877



F/G. 11b

70



**FIG. 11c**

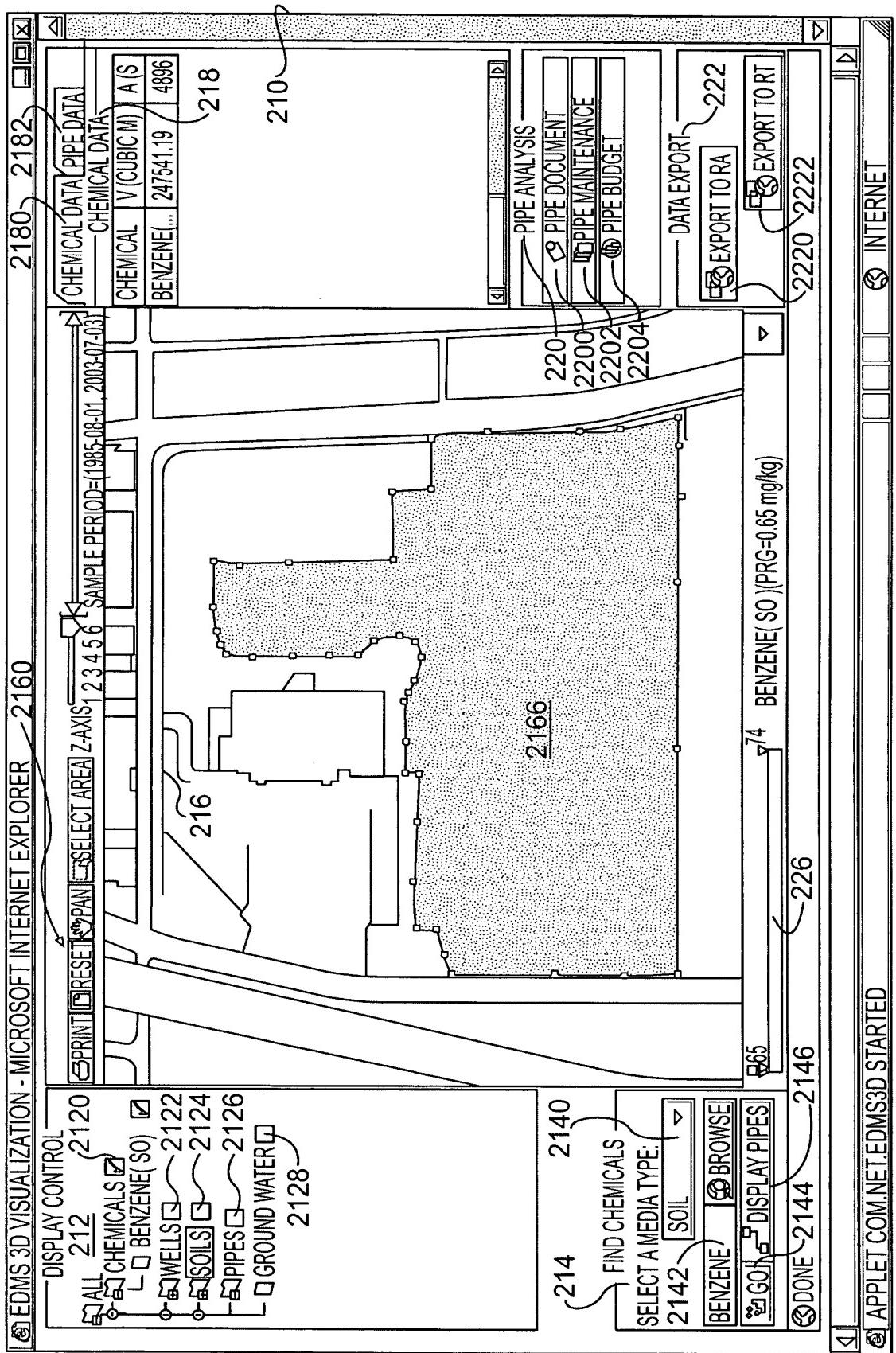


FIG. 12a

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877



FIG. 12b

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

© RISK ASSESSMENT - MICROSOFT INTERNET EXPLORER

[FILE EDIT VIEW FAVORITES TOOLS HELP] [LINKS >>] [?] [WEBHRS]

232 SITE NAME: CARSON TOWN CENTER [▼]  
234 JOB NAME: SOUTH QUADRANT [▼]  
236 ROI NAME: TEST SITE AREA 2 [▼] START DATE: 6/1/1985 - END DATE: 7/3/2003 - REMARK:  
238 SELECT JUST ONE MEDIA ONLY.  
SELECT MEDIA: SOIL [▼] SILT [▼] 230

O MANUALLY SELECT © ALL DETECTED COPCS O MAX CONC. > IND, PPGS O MAX CONC. > MCL  
YOU WILL NOT BE ABLE TO CHANGE THE SELECTED COPC LIST WITH THIS OPTION.  
-SELECT COMPOUND- [▼]  
BENZENE  
ETHYL BENZENE  
PHCAS DIESEL FUEL  
PHCAS DIESEL GASOLINE

240 SELECT COMPOUND:

242 TOXICITY: OFEDERAL © STATE [CALIFORNIA] [▼]

TO SELECT MORE THAN ONE RECEPTOR, HOLD DOWN THE CTRL KEY WHILE MAKING SELECTIONS  
-SELECT RECEPTOR- [▼]  
COMMERCIAL WORKER  
CONSTRUCTION WORKER  
RESIDENTIAL ADULT  
RECREATIONAL ADULT

244 SELECT RECEPTOR:  
TO SELECT MORE THAN ONE PATHWAY, HOLD DOWN THE CTRL KEY WHILE MAKING SELECTIONS [▼]

TO FIG. 13a CONT.

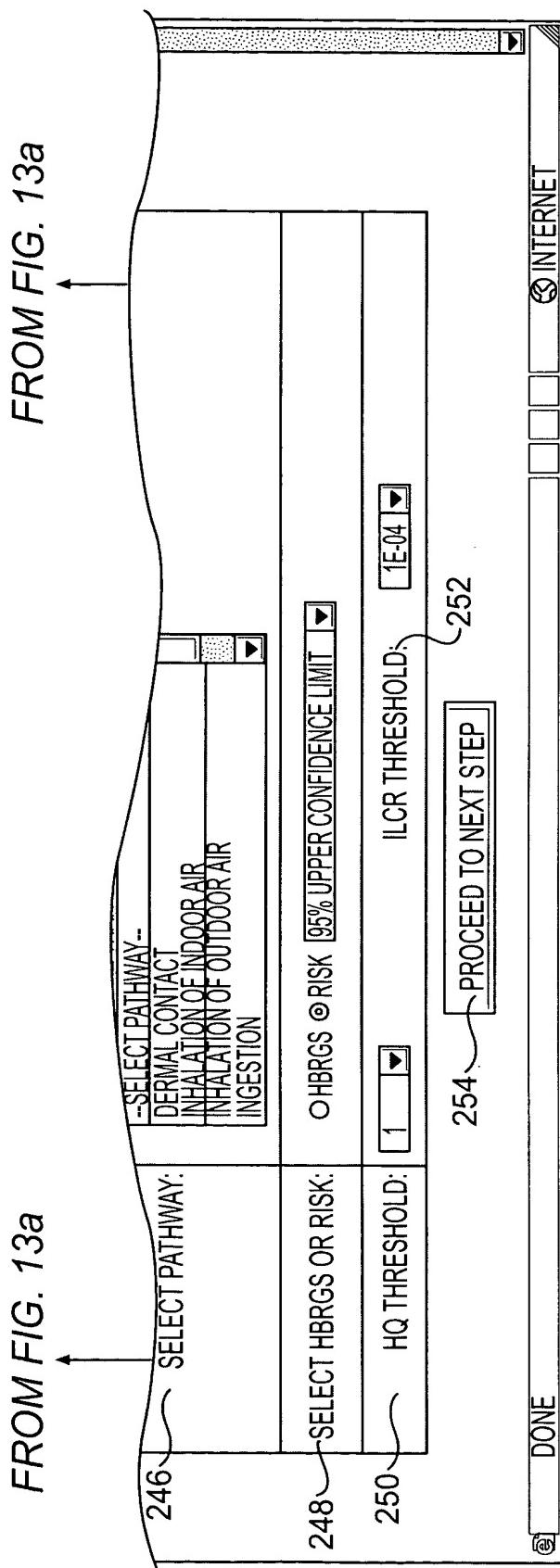
FIG. 13a

TO FIG. 13a CONT.

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877



**FIG. 13a CONT.**

RECEPTORS PARAMETERS - MICROSOFT INTERNET EXPLORER

[FILE EDIT VIEW FAVORITES TOOLS HELP] [LINKS >] [?]

PLEASE REVIEW THE RECEPTOR PARAMETERS BASED ON THE CONDITION YOU HAVE JUST SELECTED.

RECEPTOR PARAMETERS

RECEPTOR	EFD	EFINH	EFING	EDC	EDN	BW	IR	AF	SA	ETIN
COMMERCIAL WORKER	0	250	250	70	25	70	1.25	1	5800	8
CONSTRUCTION WORKER	250	250	250	70	1	70	1.5	1	3760	0
RESIDENTIAL ADULT	400	350	350	70	30	70	0.83	1	5860	16

RETURN TO PREVIOUS STEP [MAKE CHANGES] [CONTINUE]

NOTES:

EFD: EXPOSURE FREQUENCY DERMAL (DAYS/YEAR)  
EFINH: EXPOSURE FREQUENCY INHALATION (DAYS/YEAR)  
EFING: EXPOSURE FREQUENCY INGESTION (DAYS/YEAR)  
EDC: EXPOSURE DURATION FOR CARCINOGENS (YEARS)  
EDN: EXPOSURE DURATION FOR NON-CARCINOGENS (YEARS)  
BW: BODY WEIGHT (kg)  
IR: INHALATION RATE (INDOOR/OUTDOOR AIR) ( $m^3/HOUR$ )  
IRS: INGESTION RATE OF SOIL (mg/DAY)  
AF: SOIL TO SKIN ADHERENCE FACTOR (mg/cm<sup>2</sup>)  
SA: SKIN SURFACE AREA (cm<sup>2</sup>)  
ETOUT: EXPOSURE TIME OUTDOORS (HOURS/DAY)  
ETIN: EXPOSURE TIME INDOORS (HOURS/DAY)

264 ↪ 266 ↪ 268 ↪ 260 ↪ 262 ↪

[DONE] [INTERNET]

FIG. 13b

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

RECEPtors PARAMETERS - MICROSOFT INTERNET EXPLORER

[FILE EDIT VIEW FAVORITES TOOLS HELP] [LINKS >>] [?]

PLEASE TYPE OVER THE RECEPTOR PARAMETER THAT YOU WOULD LIKE TO CHANGE.

RECEPTOR PARAMETERS

RECEPTOR	EFD	EFING	EDC	EDN	BW	IR	AF	SA	ETIN
COMMERCIAL WORKER	0	250	70	25	70	1.25	1	5800	8
CONSTRUCTION WORKER	250	250	70	1	70	1.5	1	3760	0
RESIDENTIAL ADULT	400	350	70	30	70	0.83	1	5800	16

[ACCEPT CHANGES] [CANCEL CHANGES]

NOTES:  
EFD: EXPOSURE FREQUENCY DERMAL (DAYS/YEAR)  
EFinH: EXPOSURE FREQUENCY INHALATION (DAYS/YEAR)  
EFING: EXPOSURE FREQUENCY INGESTION (DAYS/YEAR)  
EDC: EXPOSURE DURATION FOR CARCINOGENS (YEARS)  
EDN: EXPOSURE DURATION FOR NON-CARCINOGENS (YEARS)  
BW: BODY WEIGHT (kg)  
IR: INHALATION RATE (INDOOR/OUTDOOR AIR) ( $m^3/HOUR$ )  
IRS: INGESTION RATE OF SOIL (mg/DAY)  
AF: SOIL TO SKIN ADHERENCE FACTOR (mg/cm $^2$ )  
SA: SKIN SURFACE AREA (cm $^2$ )  
ETOut: EXPOSURE TIME OUTDOORS (HOURS/DAY)  
ETIn: EXPOSURE TIME INDOORS (HOURS/DAY)

269 ↗ 274 ↗ 276 ↗ 270 ↗ 272 ↗

[DONE] [INTERNET]

FIG. 13C

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

HQ/LCR PRELIMINARY REPORT

RECEPTOR/PATHWAY	COMPOUND	CONCENTRATION (mg/kg)	HQ CALCULATION			ILCR CALCULATION		
			CDI (mg/kg*DAY)	RFD (mg/kg*DAY)	HQ (UNITLESS)	CDI (mg/kg*DAY)	CSF (kg/*DAY/mg)	ILCR (UNITLESS)
<b>RECEPTOR: COMMERCIAL WORKER</b>								
INHALATION OF INDOOR AIR BENZENE	1.23E-0	1.23E+0	1.7E-3	6.34E-1	9.13E-4	1.E-1	9.13E-5	
INHALATION OF INDOOR AIR ETHYL BENZINE	2.61E+0	2.61E+0	2.9E-1	2.05E-3	5.95E-4	3.85E-3	2.29E-6	
INHALATION OF INDOOR AIR PHC AS DIESEL FUEL	4.E+2	4.E+2	N/A	N/A	N/A	N/A	N/A	
INHALATION OF INDOOR AIR PHC AS GASOLINE	3.25E+2	3.25E+2	N/A	N/A	N/A	N/A	N/A	
INHALATION OF INDOOR AIR TE TRACHLOROETHYLENE(PE)	1.84E-1	1.84E-1	1.7E-1	1.97E-3	3.34E-4	1.5E-1	5.02E-5	
INHALATION OF INDOOR AIR TOLUENE	4.22E+0	4.22E+0	1.1E-1	1.37E-2	1.5E-3	N/A	N/A	
INHALATION OF INDOOR AIR TRICHLOROETHYLENE(TCE)	1.44E-1	1.44E-1	1.1E-2	1.72E-2	1.72E-4	1.E-2	1.72E-6	
INHALATION OF INDOOR AIR XYLYNES, TOTAL	8.43E+0	8.43E+0	2.9E-2	N/A	N/A	N/A	N/A	
<b>RECEPTOR: CONSTRUCTION WORKER</b>								
DERMAL CONTACT BENZENE	1.23E-0	4.52E-7	3.E-3	1.61E-4	4.67E-7	1.66E-2	2.49E-8	
DERMAL CONTACT ETHYL BENZINE	2.61E+0	9.6E-7	1.07E-1	8.97E-6	9.6E-7	3.85E-3	3.69E-9	
DERMAL CONTACT PHC AS DIESEL FUEL	4.E+2	N/A	N/A	N/A	N/A	N/A	N/A	
DERMAL CONTACT PHC AS GASOLINE	3.25E+2	N/A	N/A	N/A	N/A	N/A	N/A	
DERMAL CONTACT TE TRACHLOROETHYLENE(PE)	1.84E-1	6.78E-8	1.E-1	6.78E-7	6.78E-8	5.2E-2	3.53E-9	
DERMAL CONTACT TOLUENE	4.22E+0	1.55E-6	1.6E-0	9.71E-7	1.66E-6	N/A	N/A	
DERMAL CONTACT TRICHLOROETHYLENE(TCE)	1.44E-1	5.3E-8	3.E-4	1.77E-4	5.3E-8	4.E-1	2.12E-8	

PAGE 1 OF 3

TO FIG. 13d CONT.

FIG. 13d

TO FIG. 13d CONT.

FROM FIG. 13d

FIG. 13Q CONT

FROM FIG. 13d

\*\*\*FOR PURPOSES OF THIS SCREENING LEVEL RISK ASSESSMENT, THE FOLLOWING PATHWAYS ARE CONSIDERED POTENTIALLY COMPLETE FOR EACH RECEPTOR:

1. CONSTRUCTION WORKER: DERMAL CONTACT, INGESTION AND INHALATION OF OUTDOOR AIR.
2. COMMERCIAL WORKER: INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
3. RESIDENTIAL ADULT AND CHILD: DERMAL CONTACT, INGESTION, INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
4. RECREATIONAL ADULT AND CHILD: DERMAL, INGESTION AND INHALATION OF OUTDOOR AIR.
5. IF THE CONCENTRATION COLUMN IS NA, THE PATHWAY IS CONSIDERED INCOMPLETE.
6. IF THE TOXICITY COLUMN IS NA, THE PATHWAY IS CONSIDERED INCOMPLETE.
7. WHERE AVAILABLE CUBRICOMIC TOXICITY VALUES ARE USED FOR CONSTRUCTION WORKER.
8. IF LEAD IS A PRIMARY COPC, ADDITIONAL EVALUATION IS NECESSARY.
9. COMPOUNDS WITHOUT REQUIRED PARAMETERS FOR RISK-BASED CALCULATOR WILL BE EXCLUDED AND CAN BE VIEWED TRANSACTION LOG STEP 1b.

GET SUMMARY REPORT

VIEW TOXICITY VALUES

VIEW EXCEL REPORT

RETURN TO WEBHRS

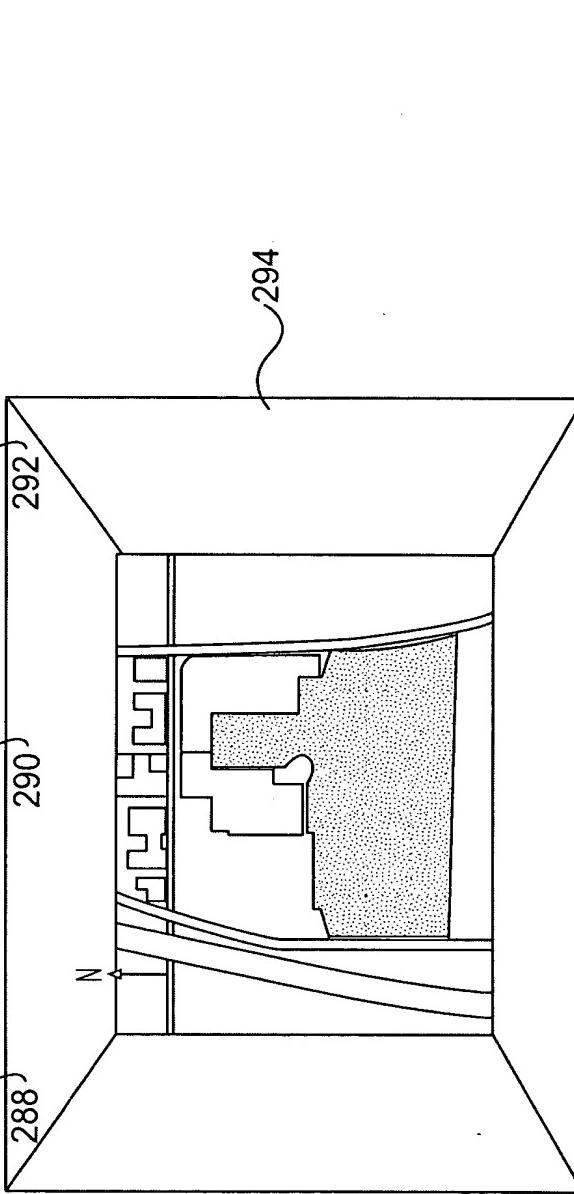
286

290

292

294

N



DONE

INTERNET

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

SUMMARY REPORT - MICROSOFT INTERNET EXPLORER		FILE EDIT VIEW FAVORITES TOOLS HELP		LINKS >>		PRINT	
<p>RISK CHARACTERIZATION SUMMARY REPORT</p> <p>SITE NAME: CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT          ROI NAME: TEST SITE AREA 2 - START DATE: 8/1/1985 12:00:00 PM - END DATE: 7/3/2003 12:00:00 PM          MEDIA: SOIL - SOIL TYPE: SILT - REPORT DATE/TIME: 1/12/2004 8:36:29 PM          RECEPTOR: COMMERCIAL WORKER, CONSTRUCTION WORKER, RESIDENTIAL ADULT          PATHWAY: DERMAL CONTACT/INHALATION OF INDOOR AIR          RISK - CONCENTRATION BASIS: 95% UPPER CONFIDENCE LIMIT - HQ THRESHOLD: 1.E+0 - ILCR THRESHOLD: 1.E-4</p>							
COMPOUND		CUMULATIVE HQ SUMMARY			CUMULATIVE ILCR SUMMARY		
		INGESTION	DERMAL	OUTDOOR AIR	ALL PATHWAYS	INGESTION	DERMAL
COMMERCIAL WORKER	3020				3026		
BENZENE	<u>3024</u>	N/A	N/A	N/A	5.34E-1	5.34E-1	N/A
ETHYLBENZENE		N/A	N/A	N/A	2.05E-3	N/A	N/A
PHC AS DIESEL FUEL		N/A	N/A	N/A	N/A	N/A	N/A
PHC AS GASOLINE	<u>302</u>	N/A	N/A	N/A	N/A	N/A	N/A
TETRACHLOROETHYLENE(PCE)		N/A	N/A	N/A	1.97E-3	1.97E-3	N/A
TOLUENE		N/A	N/A	N/A	1.37E-2	1.37E-2	N/A
TRICHLOROETHYLENE(TCE)		N/A	N/A	N/A	1.72E-2	1.72E-2	N/A
XYLENES, TOTAL		N/A	N/A	N/A	N/A	N/A	N/A
CUMULATIVE HQ/ILCR		N/A	N/A	N/A	-5.69E-1	-5.69E-1	N/A
COMMERCIAL WORKER					3028	3030	3032
BENZENE		N/A	1.51E-4	N/A	N/A	1.51E-4	N/A
ETHYLBENZENE		N/A	8.97E-6	N/A	N/A	8.97E-6	N/A
PHC AS DIESEL FUEL		N/A	N/A	N/A	N/A	N/A	N/A
PHC AS GASOLINE		N/A	N/A	N/A	N/A	N/A	N/A
TETRACHLOROETHYLENE(PCE)		N/A	6.78E-7	N/A	N/A	6.78E-7	N/A

PAGE 10 OF 2

TO FIG. 13e CONT.

FIG. 13e

TO FIG. 13e CONT.

FROM FIG. 13e

## FIG. 13e CONT.

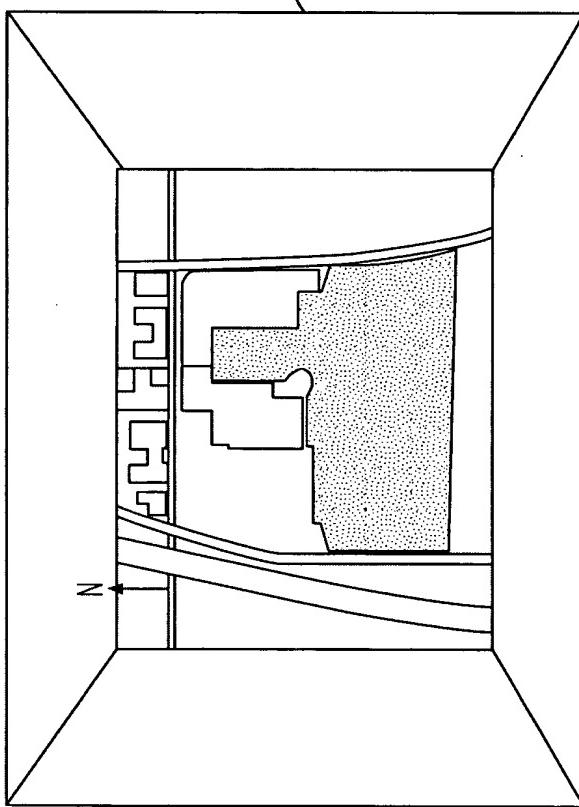
FROM FIG. 13e

\*\*FOR PURPOSES OF THIS SCREENING LEVEL RISK ASSESSMENT, THE FOLLOWING PATHWAYS ARE CONSIDERED POTENTIALLY COMPLETE FOR EACH RECEPTOR:

1. CONSTRUCTION WORKER: DERMAL CONTACT WITH SOIL AND GROUNDWATER, AND INHALATION OF OUTDOOR AIR.
2. COMMERCIAL WORKER: INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
3. RESIDENTIAL ADULT AND CHILD: DERMAL CONTACT WITH SOIL, INGESTION OF SOIL, INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
4. RECREATIONAL ADULT AND CHILD: DERMAL WITH SOIL, INGESTION OF SOIL AND INHALATION OF OUTDOOR AIR.

304  
306  
290  
292  
294

GET SUMMARY REPORT    VIEW TOXICITY VALUES    VIEW EXCEL REPORT    RETURN TO WEBHRAS



DONE

INTERNET

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

SUMMARY REPORT - MICROSOFT INTERNET EXPLORER

FILE EDIT VIEW FAVORITES TOOLS HELP

RISK CHARACTERIZATION SUMMARY REPORT

SITE NAME: CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT  
ROI NAME: TEST SITE AREA 2 - START DATE: 8/1/1985 12:00:00 PM - END DATE: 7/3/2003 12:00:00 PM ~ 310  
MEDIA: SOIL - SOIL TYPE: SILT - REPORT DATE/TIME: 1/12/2004 8:36:29 PM  
RECEPTOR: COMMERCIAL WORKER, CONSTRUCTION WORKER, RESIDENTIAL ADULT  
PATHWAY: DERMAL CONTACT, INHALATION OF INDOOR AIR  
RISK - CONCENTRATION BASIS: 95% UPPER CONFIDENCE LIMIT - HQ THRESHOLD: 1.E+0 - ILCR THRESHOLD: 1.E-4

STEP ~ 312

DOWNLOAD ALL LOGS

STEP 1A\_USER\_QUERY.TXT ~ 282

TRANSACTION LOG FILE: STEP 1a USER QUERY.TXT  
DESCRIPTION: INITIAL USER SELECTED CRITERIA  
DATE/TIME: 1/12/2004 8:36:24 PM ~ 314

TRANSACTION LOG FILE

SITE NAME = CARSON TOWN CENTER  
JOB NAME = SOUTH QUADRANT  
NAME ROI = TEST SITE AREA 2  
MEDIADESC = SOIL  
SCS DESC = SILT  
RECEPTORID = CM1;CT1;RA1  
PATHWAYID = DC1;GA3  
CALCULATIONDESC = 95% UPPER CONFIDENCE LIMIT  
CASNO =  
HRGRTYPE = RISK  
HQ THRESHOLD = 1  
ILCR THRESHOLD = 0.0001  
TOXICITY = CA

304 ~ RETURN TO PRELIMINARY REPORT ~ 292

RETURN TO WEBHRS ~ 292

DONE

FIG. 13f

The screenshot shows a Microsoft Internet Explorer window with the title "TOXICITY VALUES - MICROSOFT INTERNET EXPLORER". The menu bar includes FILE, EDIT, VIEW, FAVORITES, TOOLS, and HELP. The main content area displays a "TOXICITY VALUES USED REPORT" for a site named "CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT". The report details the following information:

SITE NAME: CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT  
ROI NAME: TEST SITE AREA 2 - START DATE: 8/11/1985 12:00:00 PM - END DATE: 7/3/2003 12:00:00 PM  
MEDIA: SOIL - SOIL TYPE: SILT - REPORT DATE/TIME: 1/12/2004 8:40:14 PM  
RECEPTOR: COMMERCIAL WORKER, CONSTRUCTION WORKER, RESIDENTIAL ADULT  
PATHWAY: DERMAL CONTACT, INHALATION OF INDOOR AIR  
RISK - CONCENTRATION BASIS: 95% UPPER CONFIDENCE LIMIT - HQ THRESHOLD: 1.E-4

A large bracket on the right side of the table groups rows 320 and 322.

RECEPTOR PATHWAY	COMPOUND	TOXICITY NAME	TOXICITY DESCRIPTION	TOXICITY VALUE
COMMERCIAL WORKER	BENZENE	RDI	NCEA	1.71E-3
INHALATION OF INDOOR AIR	BENZENE	SFI	CA	1E-1
INHALATION OF INDOOR AIR	ETHYLBENZINE	RDI	IRIS	2.9E-1
INHALATION OF INDOOR AIR	ETHYLBENZINE	SFI	HEAST	3.85E-3
INHALATION OF INDOOR AIR	PHC AS DIESEL FUEL			0E+0
INHALATION OF INDOOR AIR	PHC AS GASOLINE			0E+0
INHALATION OF INDOOR AIR	TETRACHLOROETHYLENE(PCE)	RDI	NCEA	1.7E-1
INHALATION OF INDOOR AIR	TETRACHLOROETHYLENE(PCE)	SFI	CA	1.5E-1
INHALATION OF INDOOR AIR	TOLUENE	RDI	IRIS	1.1E-1
INHALATION OF INDOOR AIR	TOLUENE	SFI		0E+0
INHALATION OF INDOOR AIR	TRICHLOROETHYLENE(TCE)	RDI	NCEA	1E-2
INHALATION OF INDOOR AIR	TRICHLOROETHYLENE(TCE)	SFI	CA	1E-2
INHALATION OF INDOOR AIR	XYLENES, TOTAL	RDI	IRIS	2.9E-2
INHALATION OF INDOOR AIR	XYLENES, TOTAL	SFI		0E+0
CONSTRUCTION WORKER				
DERMAL CONTACT	BENZENE	SubRIDD	OTHER	3E-3

TO FIG. 13g CONT.

**FIG. 13g**

TO FIG. 13g CONT.

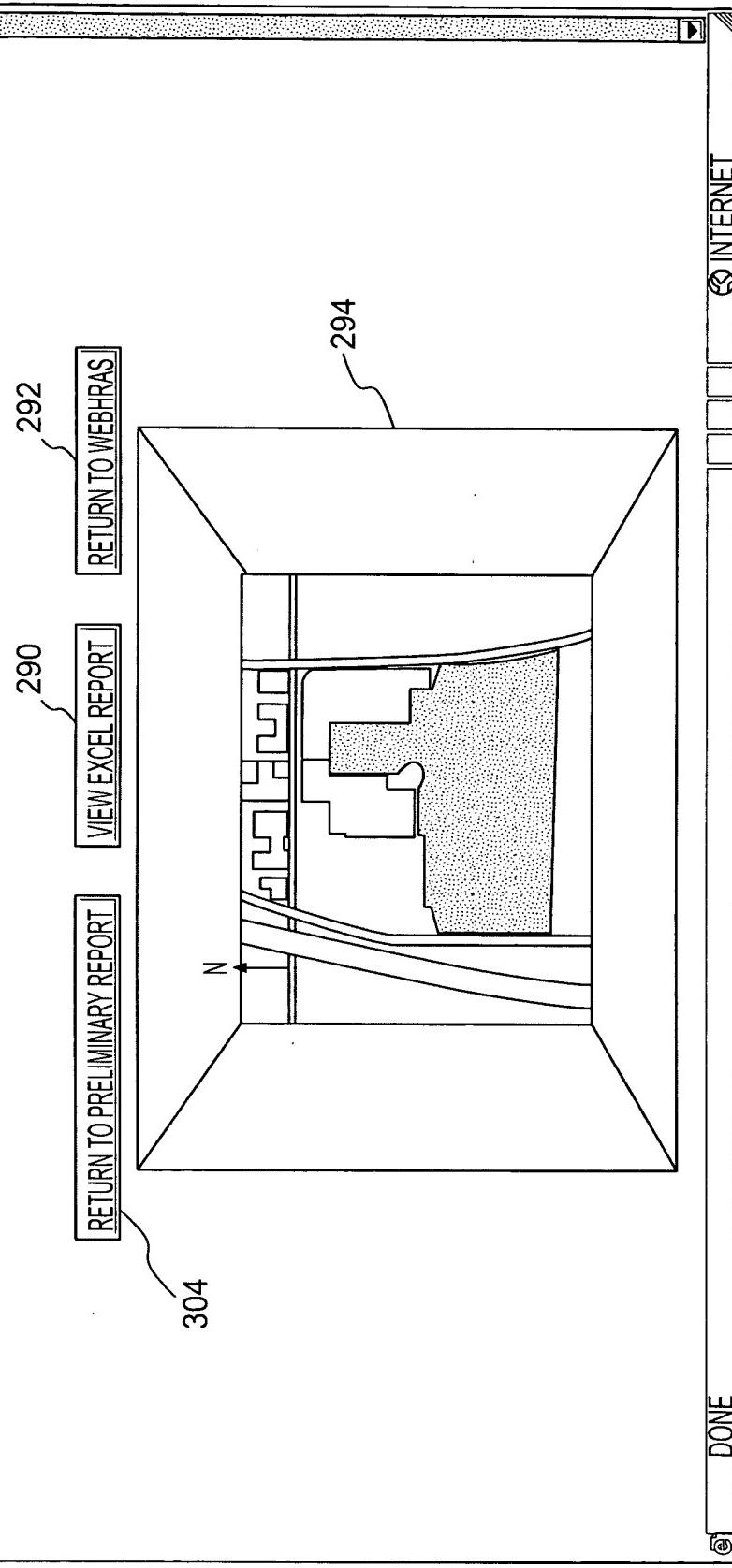
Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

FROM FIG. 13g

1. REFERENCE DOSE UNITS (RDI, RID<sub>0</sub>, RID<sub>d</sub>) ARE mg/kg\*DAY.
2. SLOPE FACTOR UNITS (SFI, SF<sub>0</sub>, SF<sub>d</sub>) ARE (mg/kg\*DAY)<sup>-1</sup>.



**FIG. 13g CONT.**

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

325

A1	▼	fx	A	B	C	D	E	F	G	H	I	J	
1													
2			HQ/ILCR PRELIMINARY REPORT										
3			SITE NAME : CARSON TOWN CENTER - JOB NAME : SOUTH QUADRANT										
4			ROI NAME : TEST SITE AREA 2 -START DATE : 8/1/1985 12:00:00 PM - END DATE : 7/3/2003 12:0										
5			MEDIA : SOIL - SOIL TYPE : SILT - REPORT DATE/TIME : 1/12/2004 8:47:46 PM										
6			RECEPTOR : COMMERCIAL WORKER, CONSTRUCTION WORKER, RESIDENTIAL ADULT										
7			PATHWAY : DERMAL CONTACT, INHALATION OF INDOOR AIR										
8			RISK - CONCENTRATION BASIS : 95% UPPER CONFIDENCE LIMIT - HQ THRESHOLD : 1.E+0 - ILCR TH										
9													
10													
11	RECEPTOR	PATHWAY	COMPOUND	CONCENTRATION	HQ CALCULATION								ILCR CALCULATION
12					CDI(mg/kg)	RfD(mg/kg)	HQ (untitled)						ILCR
13	COMMERCIAL WORK	INHALATION OF INDOOR BENZENE		1.2226371028	0.000913	0.00171	0.5333737	0.000913	0.1	9.13E			
14	COMMERCIAL WORK	INHALATION OF INDOOR ETHYL BENZENE		2.608454599	0.000595	0.29	0.00205	0.000595	0.00385	2.29E			
15	COMMERCIAL WORK	INHALATION OF INDOOR PHC AS DIESEL FU		399.9914476									
16	COMMERCIAL WORK	INHALATION OF INDOOR PHC AS GASOLINE		325.1535332									
17	COMMERCIAL WORK	INHALATION OF INDOOR TETRACHLOROETH		0.18427058	0.0000334	0.17	0.001967	0.0000334	0.15	5.02E			
18	COMMERCIAL WORK	INHALATION OF INDOOR TOLUENE		4.221836238	0.001507	0.11	0.013697	0.001507					
19	COMMERCIAL WORK	INHALATION OF INDOOR TRICHLOROETHYLE		0.144122158	0.000172	0.01	0.017152	0.000172	0.01	1.72E			

CONT. TO FIG 13h  
↓

FIG. 13h

CONT. TO FIG 13h  
↓

FIG. 13h

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

CONT. FROM FIG 13h



20	COMMERCIAL WORK	INHALATION OF INDOOR XYLENES, TOTAL	8.42916934	0.029		
21	CONSTRUCTION WORK	DERMAL CONTACT BENZENE	1.228371028	4.52E-07	0.0003	0.000151
22	CONSTRUCTION WORK	DERMAL CONTACT ETHYLBENZENE	2.608454599	9.6E-07	0.107	8.97 E-06
23	CONSTRUCTION WORK	DERMAL CONTACT PHC AS DIESEL FU	399.9914476			9.6E-07
24	CONSTRUCTION WORK	DERMAL CONTACT PHC AS GASOLINE	325.1535332			0.00085

◀ ▶ ↻ PRELIMINARY REPORT / SHEET 1 / SHEET 2 / SHEET 3 /

## FIG. 13h CONT.

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

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Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

HQ/ILCR PRELIMINARY REPORT

SITE NAME: CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT  
 ROI NAME: TEST SITE AREA 2 - START DATE: 8/1/1985 12:00:00 PM - END DATE: 7/3/2003 12:00:00 PM  
 MEDIA: SOIL - SOIL TYPE: SILT - REPORT DATE/TIME: 1/29/2004 4:31:23 PM

3520      3522      3526      3522      3526      3520      3522      3526

RECEPTOR: COMMERCIAL WORKER, RESIDENTIAL CHILD  
 PATHWAY: DERMAL CONTACT, INHALATION OF INDOOR AIR  
 PATHWAY BASIS: UNITY - HQ CONCENTRATION - HQ THRESHOLD: 1.E+0 - ILCR THRESHOLD: 1.E-4      3524

RECEPTOR/PATHWAY	COMPOUND	CONCENTRATION (mg/kg)	HQ CALCULATION			ILCR CALCULATION		
			CDI (mg/kg*DAY)	RID (mg/kg*DAY)	HQ (UNITLESS)	CDI (mg/kg*DAY)	CSF (kg*DAY/mg)	ILCR (UNITLESS)
<b>RECEPTOR: COMMERCIAL WORKER</b>								
INHALATION OF INDOOR AIR BENZENE	1.E+0	7.59E-4	1.71E+3	4.4E+1	7.62E-4	1.E+1	7.62E-6	
INHALATION OF INDOOR AIR ETHYL BENZENE	1.E+0	2.67E-4	2.9E+1	9.2E+4	2.67E-4	3.85E+3	1.03E-5	
INHALATION OF INDOOR AIR PHC AS DIESEL FUEL	1.E+0	N/A	N/A	N/A	N/A	N/A	N/A	
INHALATION OF INDOOR AIR PHC AS GASOLINE	1.E+0	N/A	N/A	N/A	N/A	N/A	N/A	
INHALATION OF INDOOR AIR TETRACHLOROETHYLENE(PCE)	1.E+0	1.16E-3	1.7E+1	6.81E+3	1.16E-3	1.5E+1	1.74E-4	
INHALATION OF INDOOR AIR TOLUENE	1.E+0	4.01E-4	1.1E+1	3.64E-3	4.01E-4	N/A	N/A	
INHALATION OF INDOOR AIR TRICHLOROETHYLENE(TCE)	1.E+0	6.61E-4	1E-2	6.61E+2	6.61E-4	1E+2	6.61E-6	
INHALATION OF INDOOR AIR XYLENES, TOTAL	1.E+0	N/A	2.9E-2	N/A	N/A	N/A	N/A	
<b>RECEPTOR: RESIDENTIAL CHILD</b>								
DERMAL CONTACT BENZENE	1.E+0	1.28E-6	3E-3	4.26E-4	1.28E-6	5.67E+2	7.25E-8	
DERMAL CONTACT ETHYL BENZENE	1.E+0	1.28E-6	9.7E+2	1.32E+5	1.28E-6	3.85E+3	4.92E+9	
DERMAL CONTACT PHC AS DIESEL FUEL	1.E+0	N/A	N/A	N/A	N/A	N/A	N/A	
DERMAL CONTACT PHC AS GASOLINE	1.E+0	N/A	N/A	N/A	N/A	N/A	N/A	
DERMAL CONTACT TETRACHLOROETHYLENE(PCE)	1.E+0	1.28E-6	1E-2	1.28E-4	1.28E-6	5.2E+2	6.65E-8	
DERMAL CONTACT TOLUENE	1.E+0	1.28E-6	1.5E+1	7.99E-6	1.28E-6	N/A	N/A	
DERMAL CONTACT TRICHLOROETHYLENE(TCE)	1.E+0	1.28E-6	9E-4	1.42E-3	1.28E-6	7.33E+2	9.37E-8	

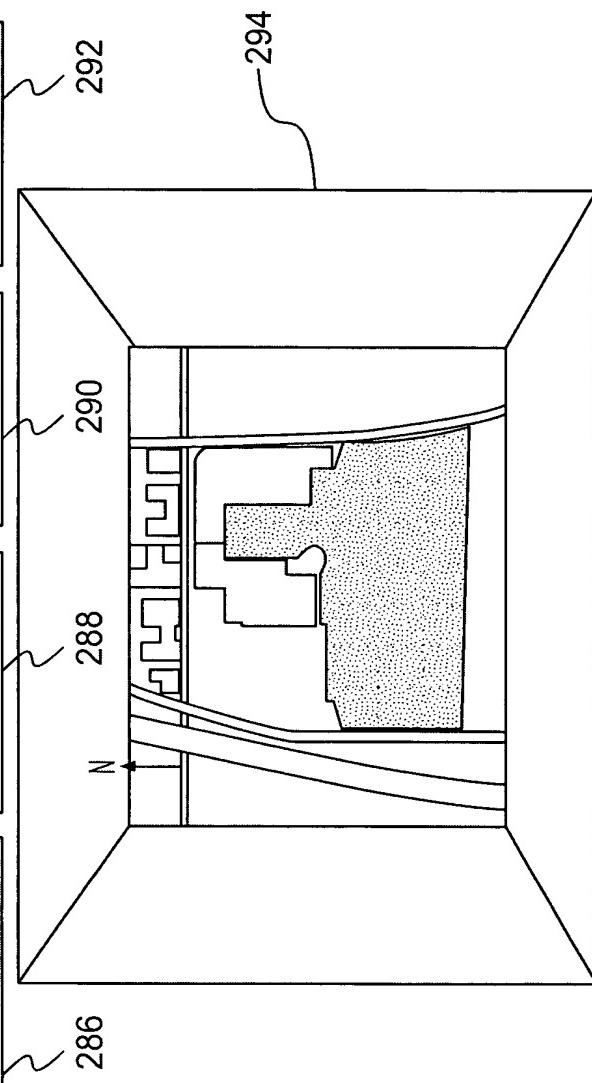
PAGE 1 OF 2

FIG. 14b  
TO FIG. 14b CONT.  
↓

FROM FIG. 14b

\*\*\*FOR PURPOSES OF THIS SCREENING LEVEL RISK ASSESSMENT, THE FOLLOWING PATHWAYS ARE CONSIDERED POTENTIALLY COMPLETE FOR EACH RECEPTOR:

1. CONSTRUCTION WORKER: DERMAL CONTACT, INGESTION AND INHALATION OF OUTDOOR AIR.
2. COMMERCIAL WORKER: INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
3. RESIDENTIAL ADULT AND CHILD: DERMAL CONTACT, INGESTION, INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
4. RECREATIONAL ADULT AND CHILD: DERMAL CONTACT, INGESTION AND INHALATION OF OUTDOOR AIR.
5. IF THE CONCENTRATION COLUMN IS NA, THE PATHWAY IS CONSIDERED INCOMPLETE.
6. IF THE TOXICITY COLUMN (RD OR CSF) IS NA, THEN NO TOXICITY IS AVAILABLE.
7. WHERE AVAILABLE SUBCHRONIC TOXICITY VALUES ARE USED FOR CONSTRUCTION WORKER.
8. IF LEAD IS A PRIMARY COPC, ADDITIONAL EVALUATION IS NECESSARY.
9. COMPOUNDS WITHOUT REQUIRED PARAMETERS FOR RISK-BASED CALCULATION WILL BE EXCLUDED AND CAN BE VIEWED IN TRANSACTION LOG STEP 1b.



DONE

INTERNET

**FIG. 14b CONT.**

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Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

SUMMARY REPORT - MICROSOFT INTERNET EXPLORER

HBRG SUMMARY REPORT

SITE NAME: CARSON TOWN CENTER - JOB NAME: SOUTH QUADRANT

ROI NAME: TEST SITE AREA 2 - START DATE: 8/11/1985 12:00:00 PM - END DATE: 7/3/2003 12:00:00 PM

MEDIA: SOIL - SOIL TYPE: SILT - REPORT DATE/TIME: 1/29/2004 4:36:41 PM

RECEPTOR: COMMERCIAL WORKER, RESIDENTIAL CHILD

PATHWAY: DERMAL CONTACT, INHALATION OF INDOOR AIR

HBRG - CONCENTRATION BASIS: UNITY - HQ THRESHOLD: 1.E+0 - ILCR THRESHOLD: 1.E-4

3626 HBRG - CONCENTRATION BASIS: UNITY - HQ THRESHOLD: 1.E+0 - ILCR THRESHOLD: 1.E-4

COMPOUND	THEORETICAL SCALED CONCENTRATION (HQ-BASED)			THEORETICAL SCALED CONCENTRATION (ILCR-BASED)		
	HBRG (mg/kg)	INGESTION	DERMAL	HBRG (mg/kg)	INGESTION	DERMAL
COMMERCIAL WORKER	3624	3622	3620	3632	3630	3626
BENZENE	NA	NA	NA	NA	NA	NA
ETHYL BENZINE	NA	NA	NA	1.09E+3	1.09E+3	NA
PHC AS DIESEL FUEL	NA	NA	NA	NA	NA	NA
PHC AS GASOLINE	NA	NA	NA	NA	NA	NA
TETRACHLOROETHYLENE(PCE)	NA	NA	NA	1.41E+2	1.41E+2	NA
TOLUENE	NA	NA	NA	2.74E+2	2.74E+2	NA
TRICHLOROETHYLENE(TCE)	NA	NA	NA	1.51E+1	1.51E+1	NA
XYLENES TOTAL	NA	NA	NA	NA	NA	NA
RESIDENTIAL CHILD						
BENZENE	NA	2.38E+3	NA	3.62E+1	NA	1.38E+3
ETHYL BENZINE	NA	7.59E+4	NA	1.73E+2	NA	2.03E+4
PHC AS DIESEL FUEL	NA	NA	NA	NA	NA	NA
PHC AS GASOLINE	NA	NA	NA	NA	NA	NA
TETRACHLOROETHYLENE(PCE)	NA	7.80E+3	NA	2.34E+1	NA	1.5E+3

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TO FIG. 14c CONT.

FIG. 14c

TO FIG. 14c CONT.

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3628

FROM FIG. 14C

\*\*\*FOR PURPOSES OF THIS SCREENING LEVEL RISK ASSESSMENT, THE FOLLOWING PATHWAYS ARE CONSIDERED POTENTIALLY COMPLETE FOR EACH RECEPTOR:

1. CONSTRUCTION WORKER: DERMAL CONTACT WITH SOIL AND GROUNDWATER, INGESTION OF SOIL AND GROUNDWATER, AND INHALATION OF OUTDOOR AIR.
2. COMMERCIAL WORKERS: INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
3. RESIDENTIAL ADULT AND CHILD: DERMAL CONTACT WITH SOIL, INGESTION OF SOIL, INHALATION OF OUTDOOR AIR AND INHALATION OF INDOOR AIR VIA VAPOR INTRUSION.
4. RECREATIONAL ADULT AND CHILD: DERMAL CONTACT WITH SOIL, INGESTION OF SOIL AND INHALATION OF OUTDOOR AIR.

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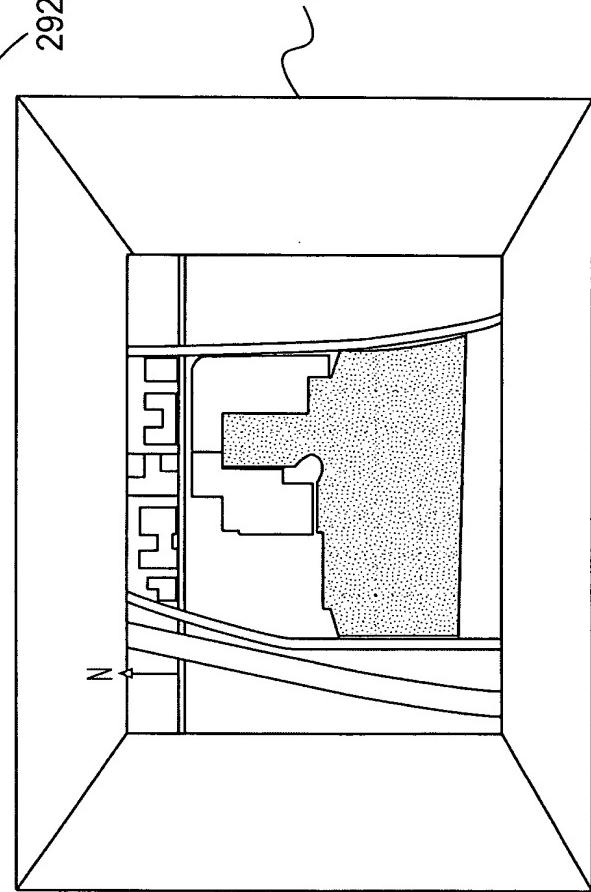
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[RETURN TO PRELIMINARY REPORT](#) [VIEW FINAL HB RG REPORT](#) [VIEW TRANSACTION LOG](#)

[RETURN TO WEBHRS](#)

[VIEW EXCEL REPORT](#)

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DONE

INTERNET

FIG. 14C CONT.

**Inventor(s):** Michael Y. YOUNG, et al.  
**Contact Name:** Sean S. Wooden (202) 662-2700  
**Attorney Docket No.:** 151877

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TO FIG. 14d CONT.

FIG. 14d

TO FIG. 14d CONT.

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

FROM FIG. 14d

1. THE FINAL HBRG FOR SOIL IS EITHER THE LOWER OF THE INITIAL HBRG OR THE SATURATION CONCENTRATION.
2. THE FINAL HBRG FOR GROUND WATER IS EITHER THE LOWER OF THE INITIAL HBRG OR THE COMPOUNDS PURE COMPONENT SOLUBILITY.
3. THE INITIAL HBRG IS EITHER THE LOWER OF THE THEORETICAL SCALED CONCENTRATION (HQ-BASED) HBRG OR (ILCA-BASED) HBRG.

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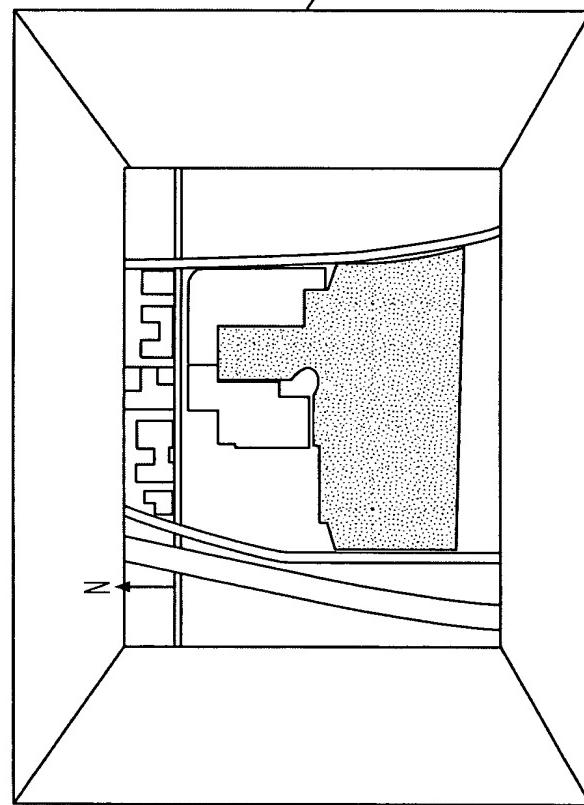
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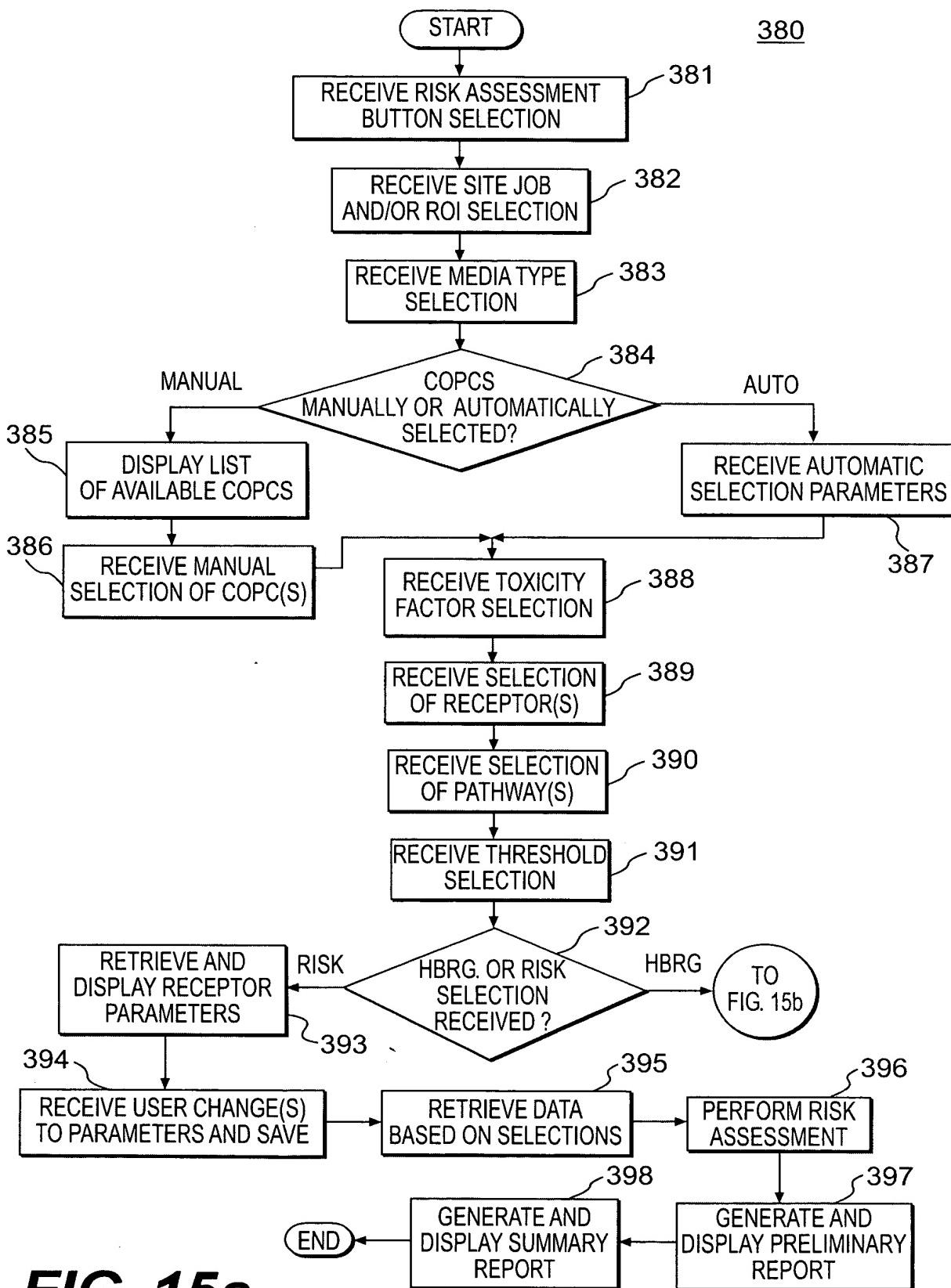
VIEW EXCEL REPORT

RETURN TO SUMMARY REPORT

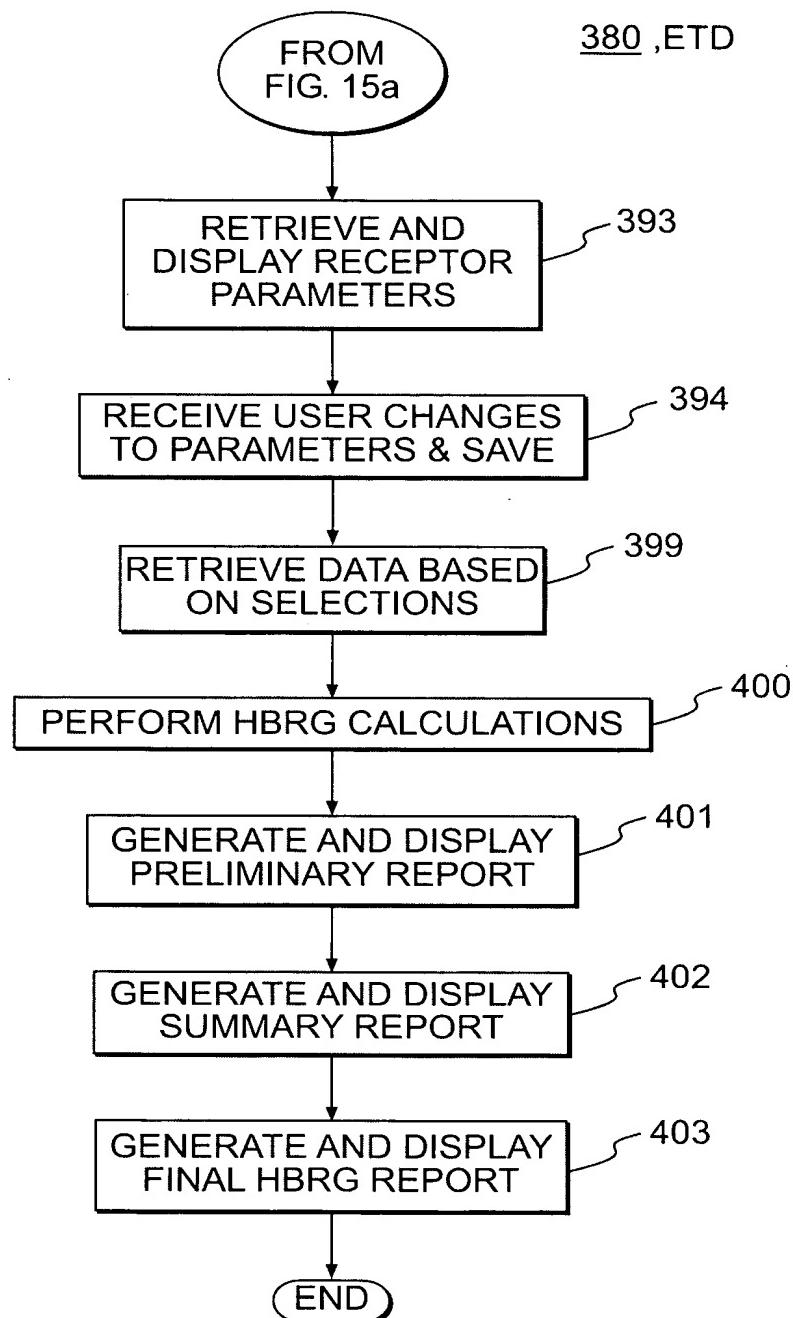


DONE  
 INTERNET

FIG. 14d CONT.



**FIG. 15a**



**FIG. 15b**

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

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412 ~ STEP 1: SELECT REGION OF INTEREST (ROI)

TEST SITE AREA 2  
DATE RANGE OF DATA USED FOR SCREENING: FROM 08/01/1985 TO 07/03/2003  
USERNAME: SQT  
DATETIME OF SCREENING RUN: JAN 13 2004 10:58 AM  
REMARK:  
MEDIA TYPE: SOIL  
NAPL (FREE-PHASE) DETECTED: NO

414 ~ STEP 2: CHOOSE SCORE LIMIT  
SHOW REMEDIAL TECHNOLOGIES  
WITH SCORES GREATER OR EQUAL THAN:  15  16  
MOST APPLICABLE: 2.0  
LEAST APPLICABLE: 0.0

416 ~ STEP 3: CLICK ON REPORT TYPE  
INITIAL SCREENING  
COMPREHENSIVE SCREENING  
COST CALCULATOR

418 ~ STEP 4: TRANSACTION REPORT FOR SELECTED REGION OF INTEREST (ROI)  
TRANSACTION REPORT

419 ~ DONE  
④ Internet

4120  
4122  
4140  
4160  
4162  
4164  
4180

F/G. 16a

Inventor(s): Michael Y. YOUNG, et al.

Contact Name: Sean S. Wooden (202) 662-2700

Attorney Docket No.: 151877

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INITIAL REMEDIAL TECHNOLOGY SCREENING RESULTS \*

SELECTION OF APPLICABLE REMEDIAL TECHNOLOGY AND RANKING IS DEFINED USING BASIC SITE KNOWLEDGE:  
MEDIA, CONTAMINANT TYPE AND CONTAMINANT (95% UCL)

REGION OF INTEREST (ROI): TEST SITE AREA 2  
CONTAMINATION PLUME ID: 66  
MEDIA: SOIL  
CONTAMINANT TYPE: FUELS, HALOGENATED VOCs

APPLICABLE REMEDIAL TECHNOLOGY      RANKING\*\*

4.1 IN-SITU SOIL VAPOR EXTRACTION	426	2.0	PARAMETERS REQUIRED TO CONDUCT COMPREHENSIVE REMEDIAL TECHNOLOGY SCREENING
4.6 IN-SITU BIOVENTING		2.0	THICKNESS OF UNSATURATED ZONE DEPTH OF CONTAMINATION BELOW GROUND SURFACE, DEPTH TO SATURATED ZONE, VOLUME EXTENT OF CONTAMINATION, SOIL BULK DENSITY, WATER FILLED POROSITY AIR FILLED POROSITY, SOIL-WATER PARTITION COEFFICIENT FOR CONTAMINANT, HERRY'S LAW CONSTANT FOR CONTAMINANT, VAPOR PERMEABILITY FOR UNSATURATED ZONE
4.7 IN-SITU ENHANCED BIOREMEDIAL		2.0	DEPTH OF CONTAMINATION BELOW GROUND SURFACE, THICKNESS EXTENT OF CONTAMINATION (Z-DIRECTION), TEMPERATURE OF MEDIA PH DEGRADATION RATE CONSTANT FOR CONTAMINANT
4.8 IN-SITU NATURAL ATTENUATION		2.0	TEMPERATURE OF MEDIA PH DEGRADATION RATE CONSTANT FOR CONTAMINANT
4.10 CONTAINMENT CAPPING		2.0	SURFACE AREA EXTENT OF CONTAMINATION, DEPTH OF CONTAMINATION BELOW GROUND SURFACE, THICKNESS EXTENT OF CONTAMINATION (Z-DIRECTION), DEPTH TO SATURATED ZONE POROSITY, SOIL-WATER PARTITION VOLUME EXTENT OF CONTAMINATION, SOIL BULK DENSITY, WATER FILLED POROSITY, AIR FILLED COEFFICIENT FOR CONTAMINANT, HERRY'S LAW CONSTANT FOR CONTAMINANT
5.1 EX-SITU SOIL VAPOR EXTRACTION		2.0	

SIGNATURES | COMMENTS | THUMBNAILS | BOOKMARKS

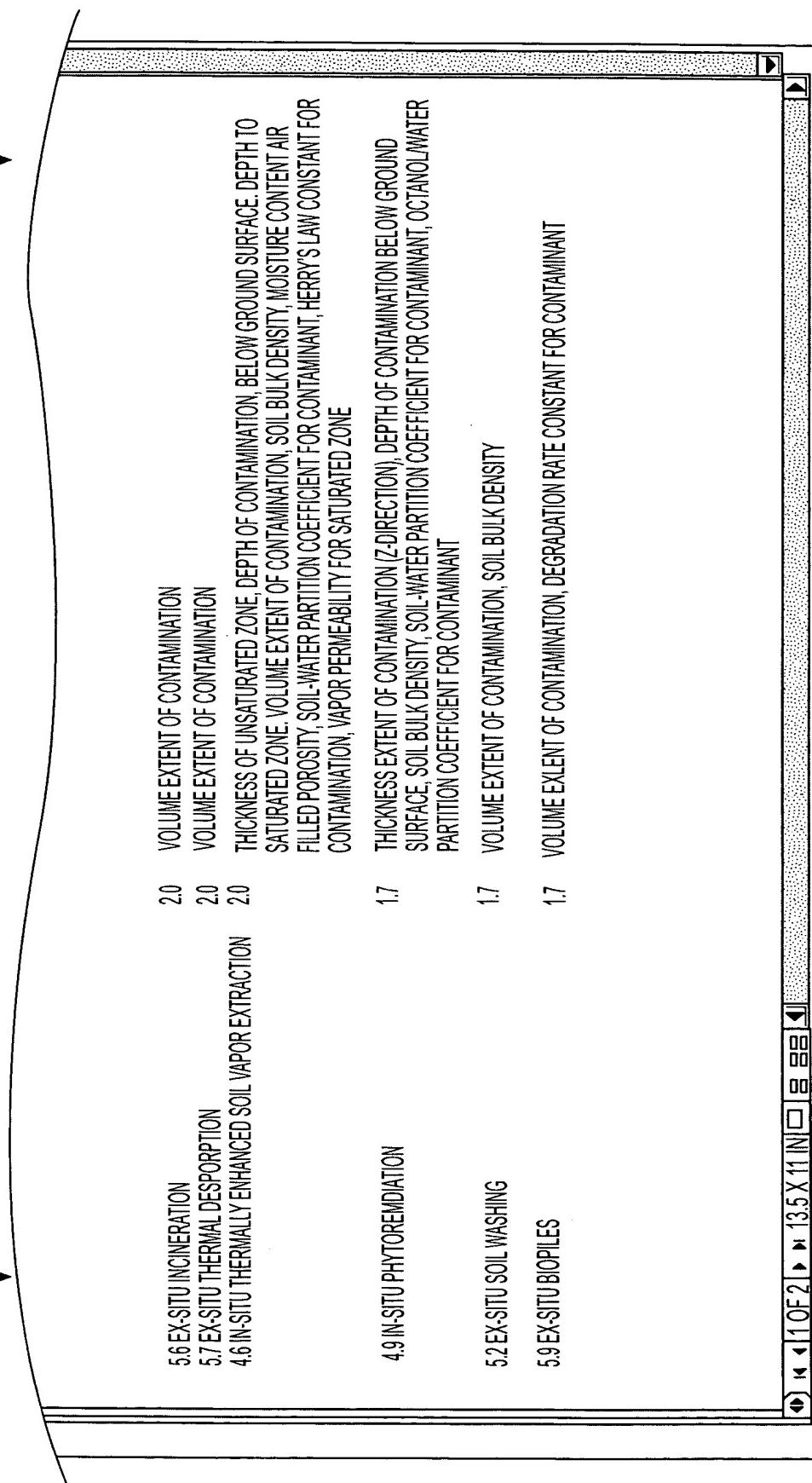
TO FIG 16b CONT.

FIG. 16b

TO FIG 16b CONT.

FROM FIG 16b

FROM FIG 16b



**FIG. 16b CONT.**

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COMPREHENSIVE REMEDIAL TECHNOLOGY SCREENING RESULTS*					
432 SELECTION OF APPLICABLE REMEDIAL TECHNOLOGY AND RANKING IS DEFINED USING DETAILED SITE KNOWLEDGE: SITE-SPECIFIC, CHEMICAL AND GEOPHYSICAL PARAMETERS					
REGION OF INTEREST (ROI): TEST SITE AREA 2 CONTAMINATION PLUME ID: 66 MEDIA: SOIL CONTAMINANT TYPE: FUELS HALOGENATED VOCs		436 RANKING** APPLICABLE REMEDIAL TECHNOLOGY		DATETIME OF SCREENING RUN: JAN 13 2004 10:58AM DATA RANGE OF DATA USED FOR SCREENING: 08/01/1995 TO 07/03/2003 438 IS THE REMEDIAL TECHNOLOGY CAPABLE OF ACHIEVING REMEDIATION OBJECTIVE FOR EACH CONTAMINANT TYPE** 440 ROUGH ORDER OF MAGNITUDE TIME ESTIMATE (YEARS)****	
4.10 CONTAINMENT CAPPING		2.0		NO (BENZENE, TRICHLOROETHYLENE (ICE)) 0.4	
4.1 IN-SITU SOIL VAPOR EXTRACTION		2.0		YES 22.8	
4.6 IN-SITU BIOVENTING		2.0		YES N/A	
4.7 IN-SITU ENHANCED BIOREMEDITION		2.0		YES N/A	
4.8 IN-SITU NATURAL ATTENUATION		2.0		YES N/A	
5.1 EX-SITU SOIL VAPOR EXTRACTION		2.0		YES 0.1	
5.6 EX-SITU INCINERATION		2.0		YES 7.1	
5.7 EX-SITU THERMAL DESORPTION		2.0		YES 18.3	

TO FIG 16c CONT.

FIG. 16c

TO FIG 16c CONT.

FROM FIG 16C

FROM FIG 16C

4.5 IN-SITU THERMALLY ENHANCED SOIL VAPOR EXTRACTION	1.7		YES		8.6
5.2 EX-SITU SOIL WASHING	1.7		YES		15.7
5.9 EX-SITU BIOPILES	1.7		YES		1.1

\* ALGORITHM IS BASED ON GUIDANCE FROM THE FRTR REMEDIATION TECHNOLOGIES SCREENING MATRIX AND REFERENCE GUIDE, VERSION 44.0 (JAN 2002)

\*\* RANKING RANGE IS FROM 2.0 (MOST APPLICABLE) TO 0.0 (LEAST APPLICABLE)

\*\*\* BASED ON IDEAL EFFICIENCY FACTORS. CHEMICAL FOR WHICH THE REMEDIATION OBJECTIVE IS NOT ACHIEVED ARE LISTED IN PARENTHESIS

\*\*\*\*REMEDIATION TIME ESTIMATES BASED ON EQUATIONS PRESENTED IN PUBLIC DOMAIN LITERATURE (E.G. GWRTAC, USEPA, FRTR, ITRC AND AFCEE)

GWRTAC- GROUND WATER REMEDIATION TECHNOLOGIES ANALYSIS CENTER  
USEPA- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
FRTR- FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE

\* ALGORITHM IS BASED ON GUIDANCE FROM THE FRTR REMEDIATION TECHNOLOGIES SCREENING MATRIX AND REFERENCE GUIDE, VERSION 44.0 (JAN 2002)

\*\*\* RANKING RANGE IS FROM 2.0 (MOST APPLICABLE) TO 0.0 (LEAST APPLICABLE)

\*\*\* BASED ON IDEAL EFFICIENCY FACTORS. CHEMICAL FOR WHICH THE REMEDIATION OBJECTIVE IS NOT ACHIEVED ARE LISTED IN PARENTHESIS  
\*\*\*\*\*REMEDIAL TIME ESTIMATES BASED ON EQUATIONS PRESENTED IN PUBLIC DOMAIN LITERATURE (E.G. GWRTAC, USEPA, FRTR, ITRC AND AFCEE)

GWRTAC- GROUND WATER REMEDIATION TECHNOLOGIES ANALYSIS CENTER  
USEPA- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
FERT- FEDERAL REMEDIATION TECHNOLOGIES ROUNDTABLE

◀ ▶

FIG. 16C CONT.

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COMPREHENSIVE REMEDIAL TECHNOLOGY SCREENING RESULTS						
APPLICABLE REMEDIAL TECHNOLOGY	RANKING (2=0)	TECHNOLOGY LIMITATIONS	ROUGH ORDER OF MAGNITUDE TIME ESTIMATE (YEARS)	UNIT PRICE	UNIT	COST ESTIMATE (UNIT PRICE* IMPACT VOLUME)
4.10 CONTAINMENT CAPPING	2.0	NO (BENZENE, TRICHLORO ETHYLENE (TCE))	0.4	35.50	M2 ▶	\$1,923,153
4.1 IN-SITU SOIL VAPOR EXTRACTION	2.0	YES	22.8		M3 ▶	
4.6 IN-SITU BIOVENTING	2.0	YES	N/A		M3 ▶	
4.7 IN-SITU ENHANCED BIOREMEDIA	2.0	YES	N/A		M3 ▶	
4.8 IN-SITU NATURAL ATTENUATION	2.0	YES	N/A		M3 ▶	
5.1 EX-SITU SOIL VAPOR EXTRACTION	2.0	YES	0.1	150.25	M3 ▶	\$46,581,271
5.6 EX-SITU INCINERATION	2.0	YES	7.1		M3 ▶	
5.7 EX-SITU THERMAL DESORPTION	2.0	YES	18.3		M3 ▶	
4.5 IN-SITU THERMALLY ENHANCED SOIL VAPOR EXTRACTION	1.7	YES	8.6		M3 ▶	
5.2 EX-SITU SOIL WASHING	1.7	YES	15.7		M3 ▶	
5.9 EX-SITU BIOPILES	1.7	YES	1.1		M3 ▶	

FIG. 16d

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REGION OF INTEREST (ROI) INFORMATION	
REGION OF INTEREST (ROI):	TEST SITE AREA 2
TIME INTERVAL:	FROM 8/1/1985 12:00:00 PM TO 7/3/2003 12:00:00 PM
USERNAME:	SQT
ROI CREATED DATE:	JAN 13 2004 10:58 AM
REMARK:	
MEDIA TYPE:	SOIL
REGION OF INTEREST (ROI) REPORTS	
<u>INITIAL SCREENING PDF FILE (NON-NAPL)</u>	
<u>INITIAL SCREENING LOG FILE (NON-NAPL)</u>	
<u>COMPREHENSIVE SCREENING PDF FILE (NON-NAPL)</u>	
<u>COMPREHENSIVE SCREENING LOG FILE (NON-NAPL)</u>	

472

474

FIG. 16e

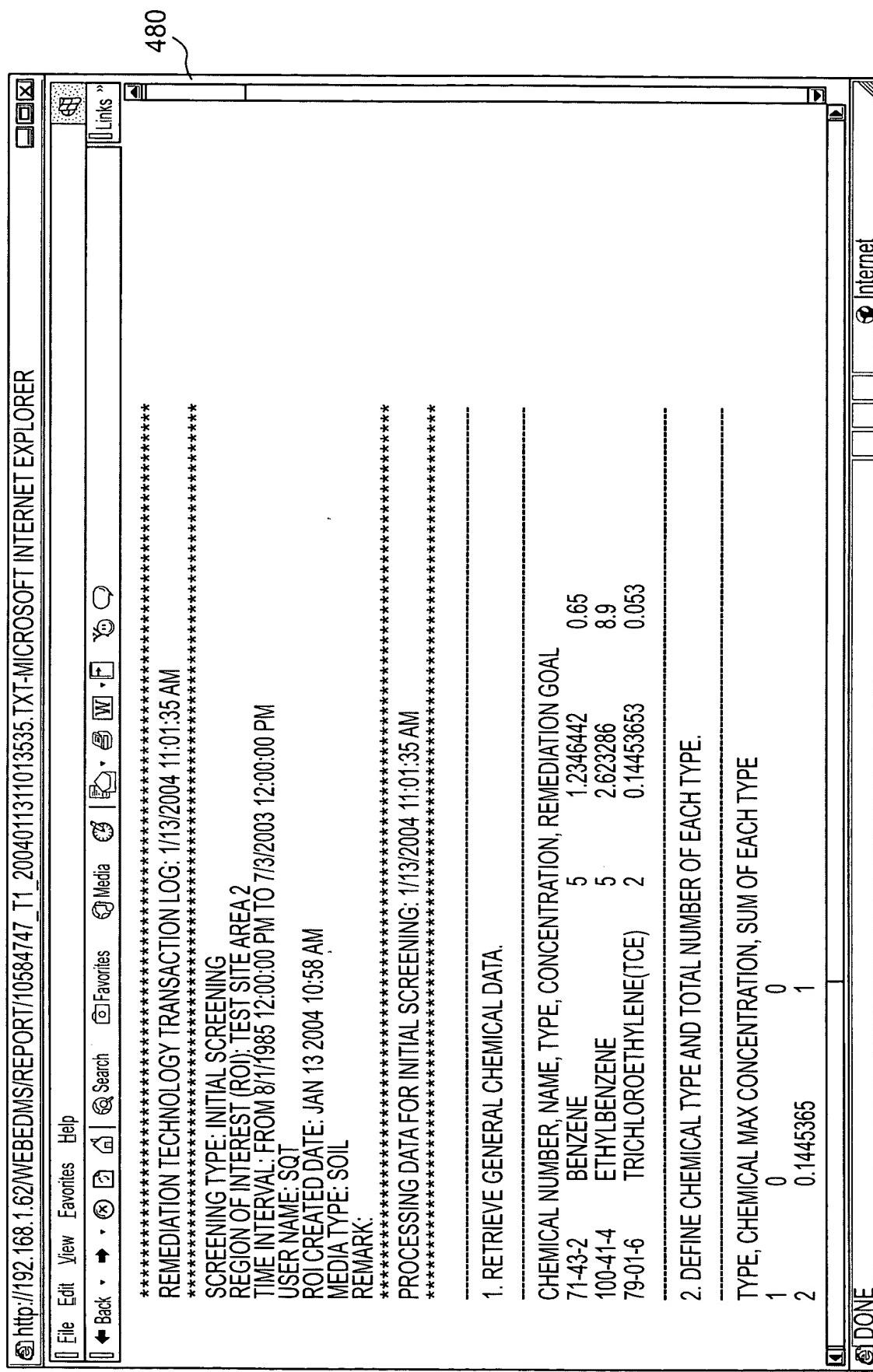
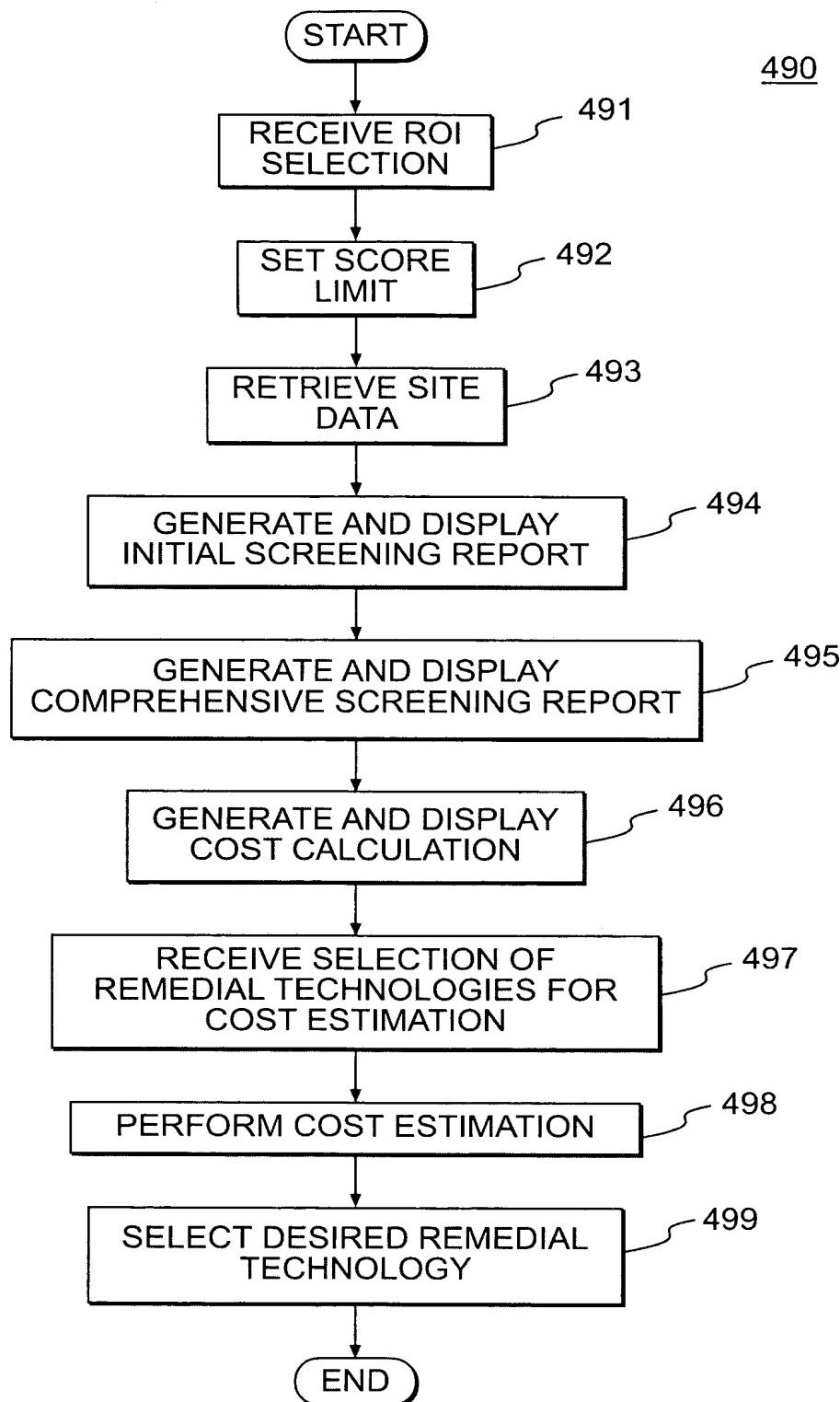


FIG. 16f



**FIG. 17**